4° Phys 64

Th. Sandoz

FRANZ JOSEPH RITTER VON GERSTNER

Doctor der Philosophie, k. k. Gubernialrath, Ritter des k. k. österreichischen Leopoldordens, Director der physischen und mathematischen Studien an der Universität, dann des technischen Institutes zu Prag, Professor der höheren Mathematik, Astronomie und der technischen Mechanik, k. k. Landeswasserbaudirector, im Königreiche Böhmen, Mitglied mehrerer gelehrten Gesellschaften.

Geboren zu Kommotau in Böhmen am 22t. Februar 1756, gestorben zu Mladiegow am 25t. Juni 1832.

Zu Gerstner's Mechanik, III Band.

Kupfer

z

HANDBUCHE D

v

Franz Joseph Rit

k. k. Gubernialrath, Ritter des k. k. österreichischen Leopoldordens, Direktor des technischen Institutes zu Prag, Professor der N
und emeritirtem Professor der höhern Mathematik und

aufgesetzt, mit Beiträgen von neuern englisch

Franz Anton Ri

Nro. **1.** ***Hebel und Schwerpunkt.***
— **2.** ***Räder an der Welle.***
— **3.** ***Rollen und Flaschenzüge.***
— **4.** ***Zerlegung der Kräfte, schiefe Fläche etc.***
— **5.** ***Schraube, Keil etc.***
— **6.** ***Winden und Hebladen.***
— **7.** ***Ausziehen der Baumstöcke, Pfähle etc.***
— **8.** ***Krämer- und Probierwage.***
— **9.** ***Schnell- und Zeigerwage.***
— **10.** ***Strassen- oder Mauthwage.***
— **11.** ***Tragbare Brückenwage.***
— **12.** ***Federwagen und Kraftmesser.***
— **13.** ***Pferdegöpel auf Krussna Hora in Böhmen.***
— **14.** ***Göpel, absolute und relative Festigkeit der Körper.***
— **15.** ***Relative Festigkeit der Körper.***
— **16.** ***Biegung, rückwirkende Festigkeit und Drehung der Körper.***
— **17.** ***Stabilität der Körper und Druck schiefstehender Balken.***
— **18.** ***Freie Ketten-Kreis- und elyptische Gewölbe.***
— **19.** ***Brückengewölbe und Verzeichnung der Lehrbögen.***
— **20.** ***Kuppelgewölbe und Kettenbrücken.***

Prag,

r tafeln

um

E R MECHANIK

on

tter von Gerstner,

Mechanik, emeritirtem Direktor der physischen und mathematischen Studien an der Universität, em. k. k. Landeswasserbaudirektor,
Astronomie, Mitglied mehrerer gelehrten Gesellschaften,

ien Konstruktionen vermehrt und herausgegeben

von

tter von Gerstner.

Nro. 21. *Kettenbrücke zu Hammersmith in England.*
— 22. *Bestandtheile der Hammersmith-Kettenbrücke.*
— 23. — 24. *Kettenbrücke über den Meeresarm Menai strait zur Verbindung der Insel Anglesey mit dem festen Lande von England.*
— 25. *Kettenbrücke über die Seine in Paris.*
— 26. *Kettenbrücken zu Bamberg und Nienburg.*
— 27. *Reibung und Unbiegsamkeit der Seile.*
— 28. *Ungleichförmige Bewegung.*
— 29. *Frachtwägen und Strassen.*
— 30. *Eisenbahnen.*
— 31. *Ausweichplätze und Wegübersetzungen bei Eisenbahnen.*
— 32. *Englische Eisenbahnen Railroads genannt.*
— 33. *Wägen auf den englischen Railroads.*
— 34. *Englische Eisenbahnen Tramroads genannt und Wägen.*
— 35. *Eisenbahnen auf schiefen Flächen.*
— 36. *Eisenbahn von Hetton nach Sunderland.*
— 37. — 38. *Grundriss der Eisenbahnstrecke von Budweis bis Leopoldschlag, unter der Leitung des Hrn. F. Anton R. v. Gerstner vom Jahre* 1825 *bis* 1828 *erbaut.*
— 39. — 40. *Längenprofil der* 32225 *Klafter langen Eisenbahn von Budweis bis zum Scheidungspunkte des Gebirges oberhalb Leopoldschlag.*

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Fig. 1.

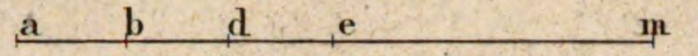
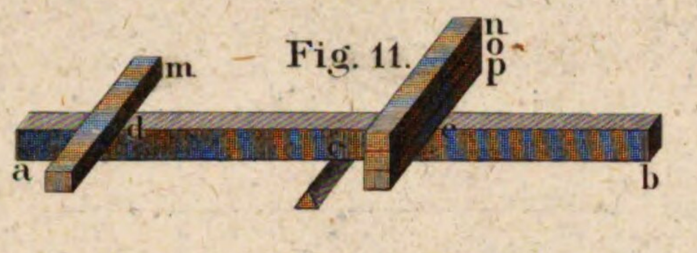


Fig. 6.

Fig. 11.



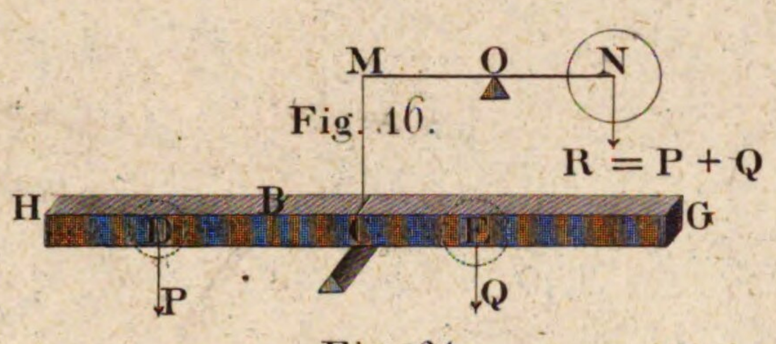
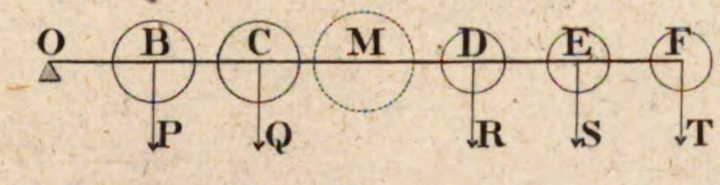
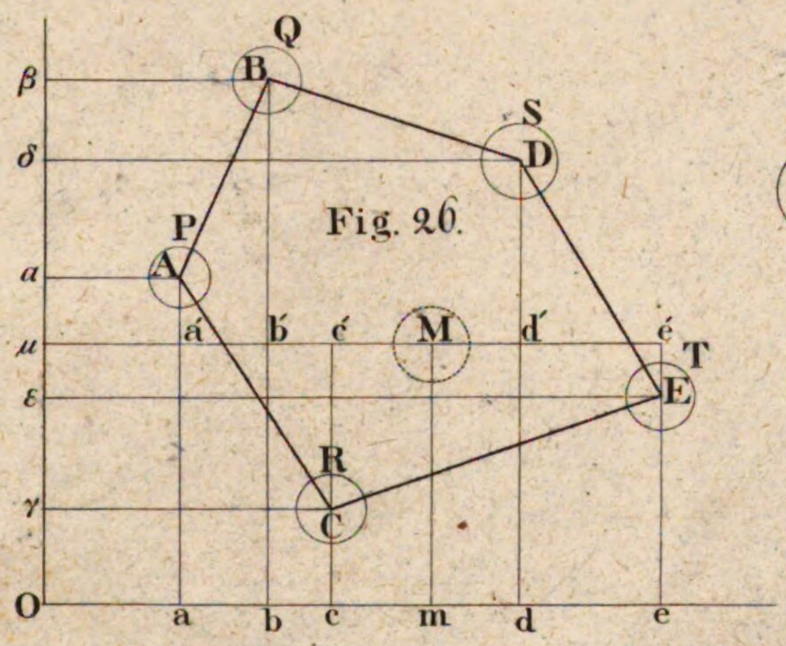


Fig. 16.

Fig. 21.





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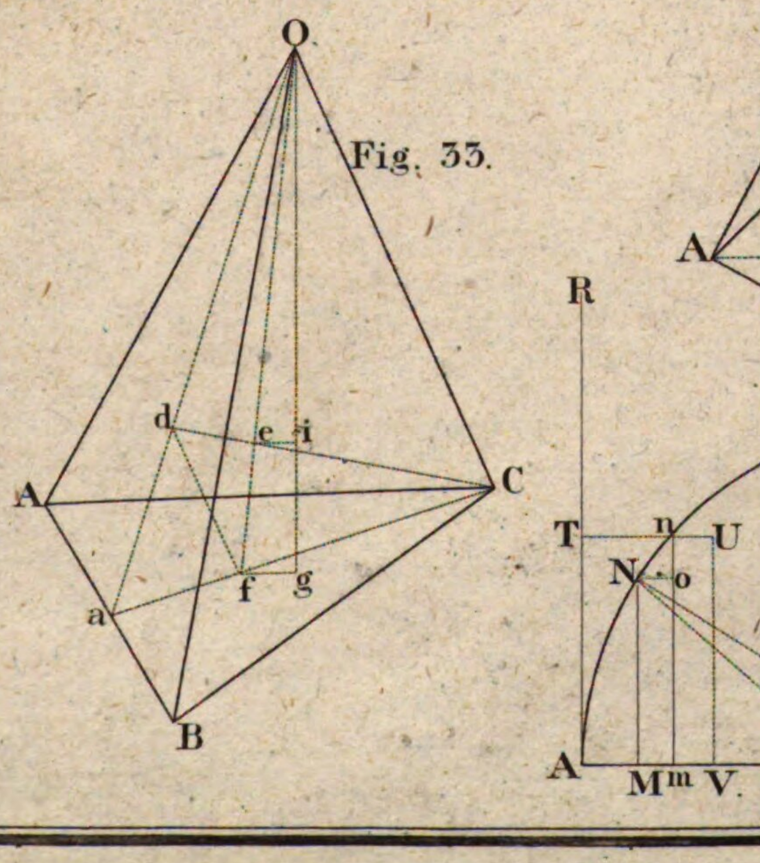

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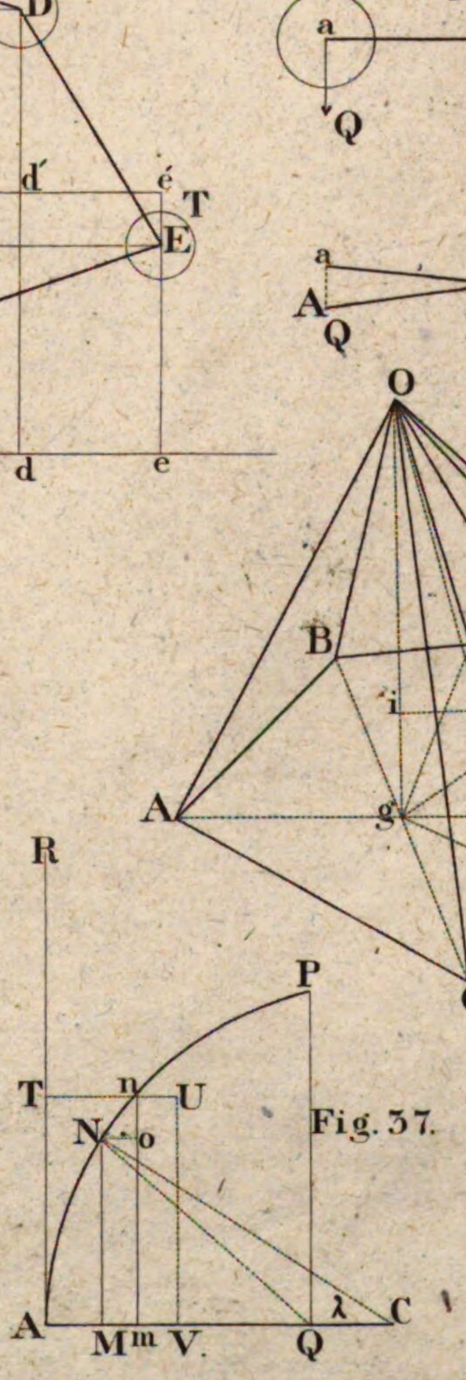

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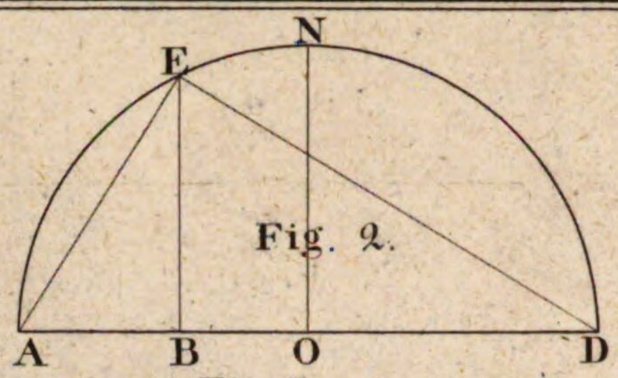
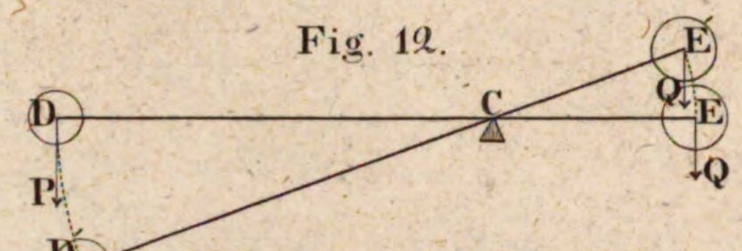


Fig. 2.

Fig. 7.

Fig. 12.



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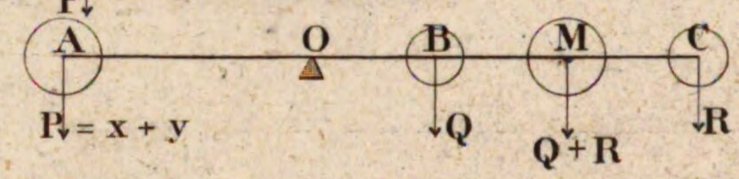

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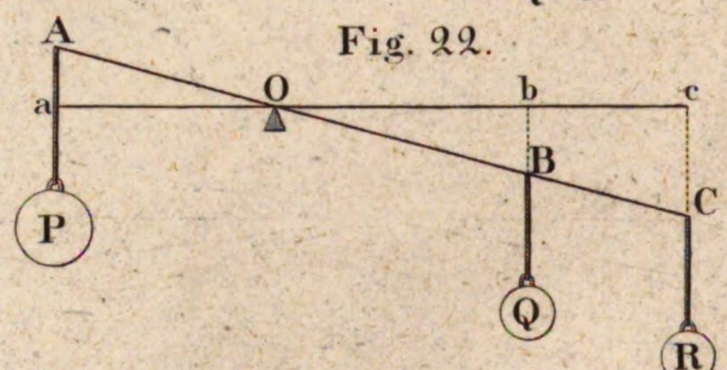

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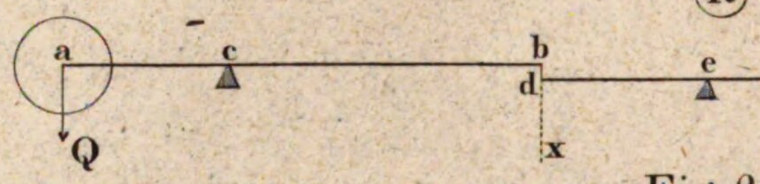

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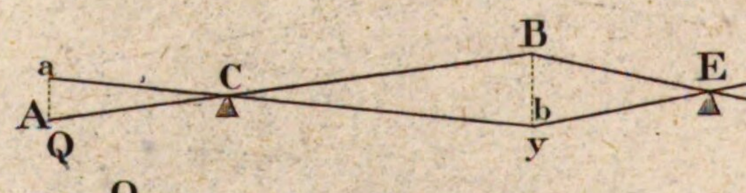

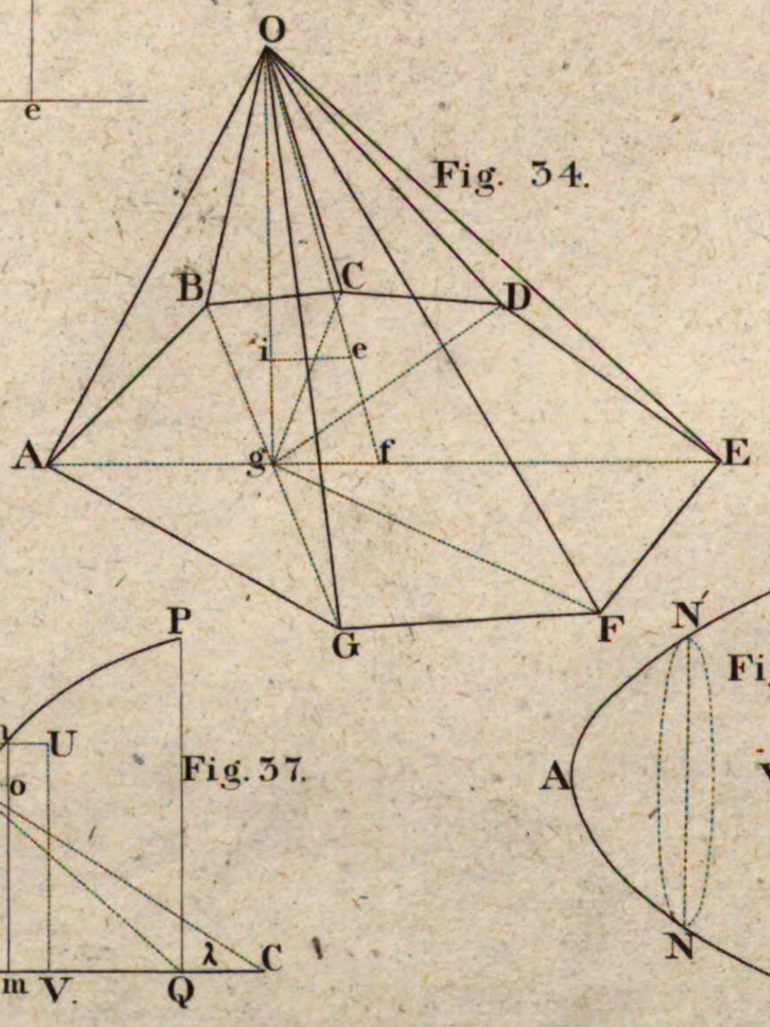

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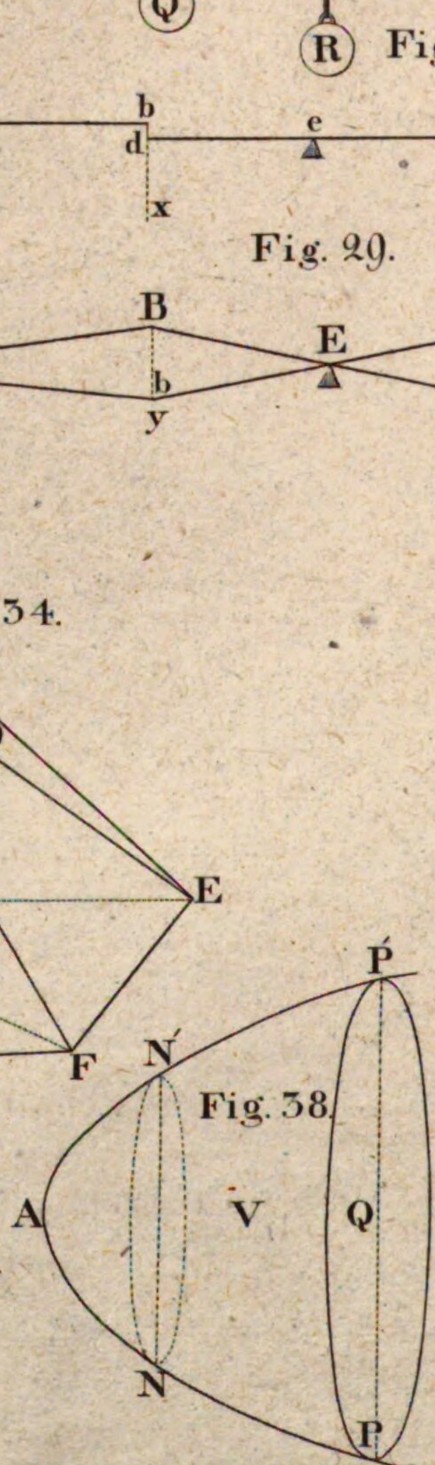

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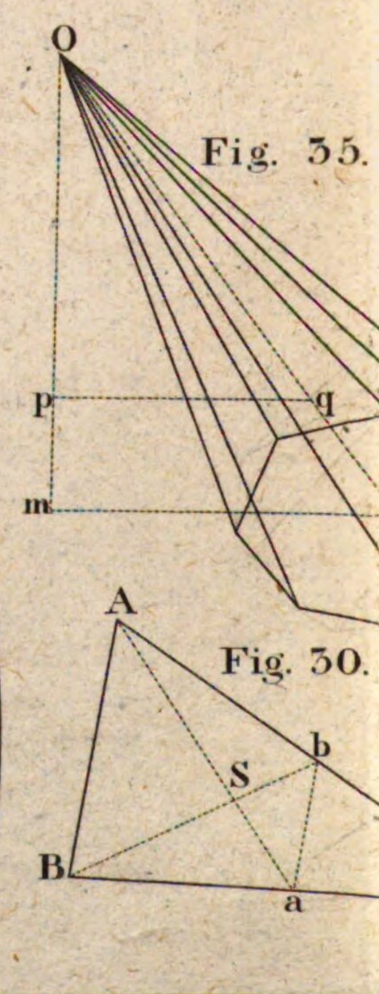

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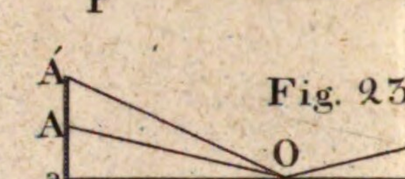

Fig. 1

Fig. 23

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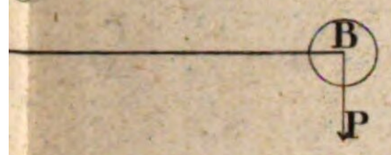

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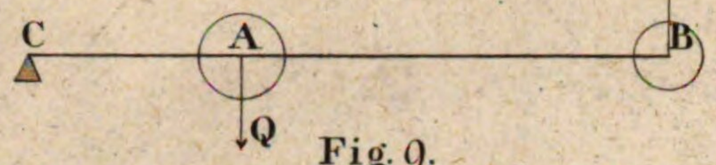

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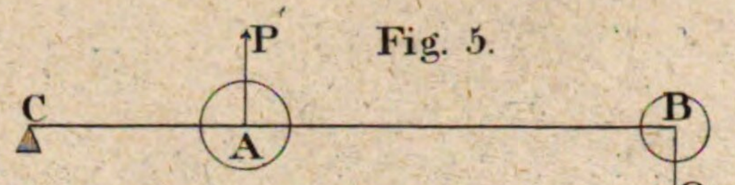

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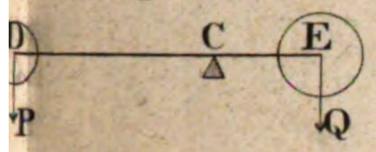
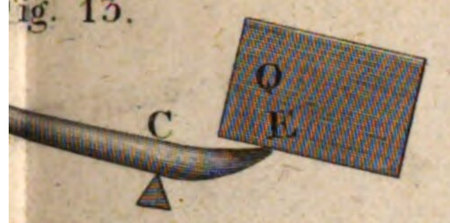


Fig. 9.

Fig. 10.

Fig. 13.



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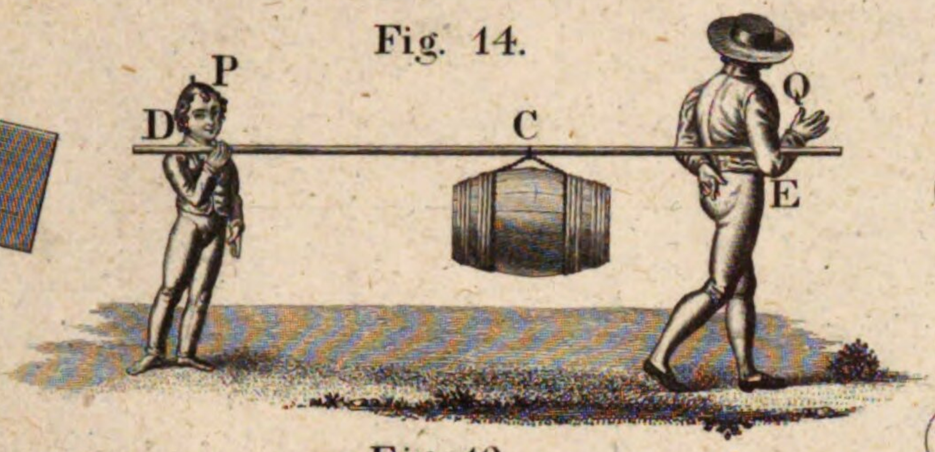

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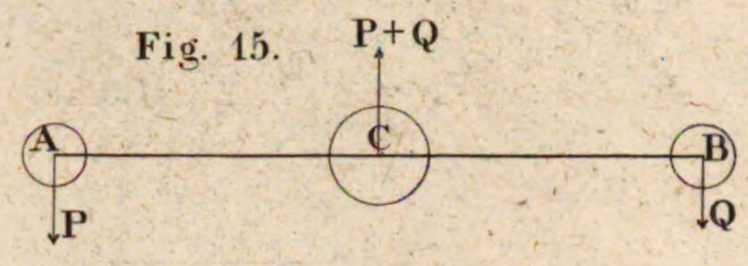

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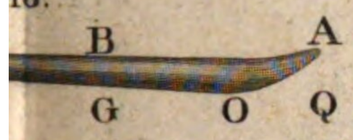

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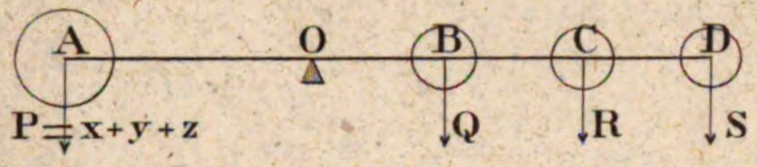

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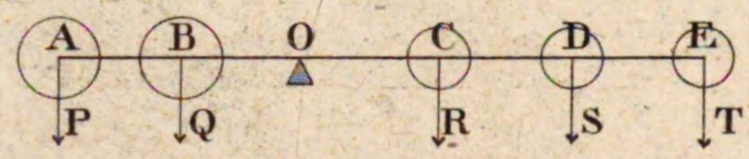

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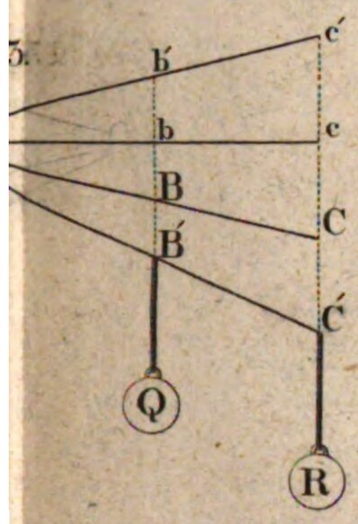

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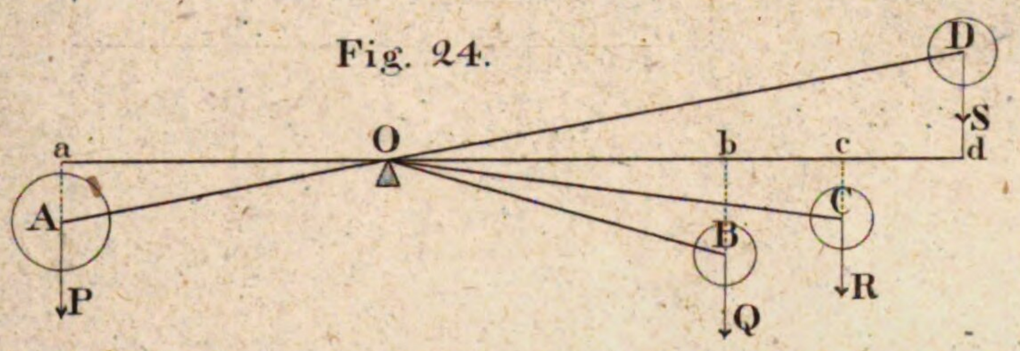

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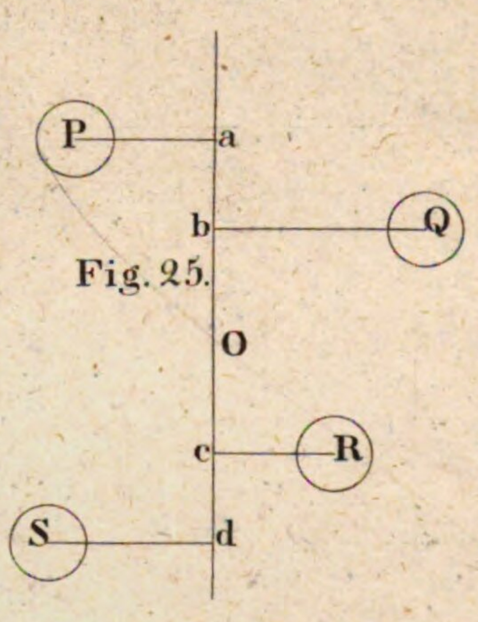

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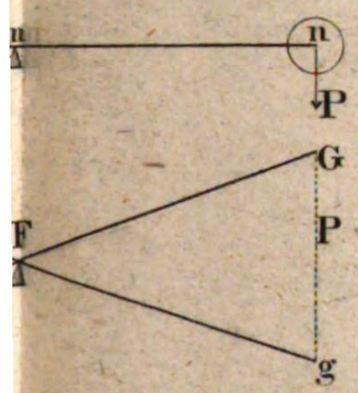

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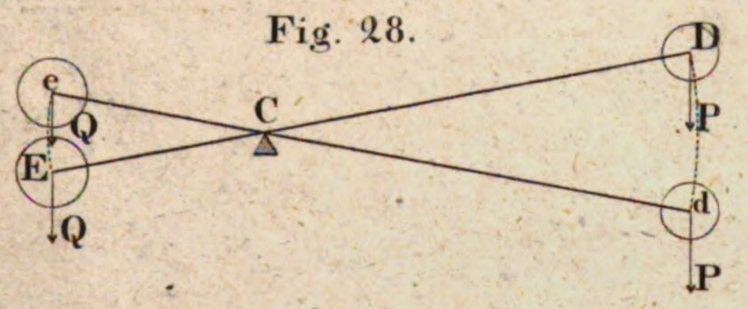

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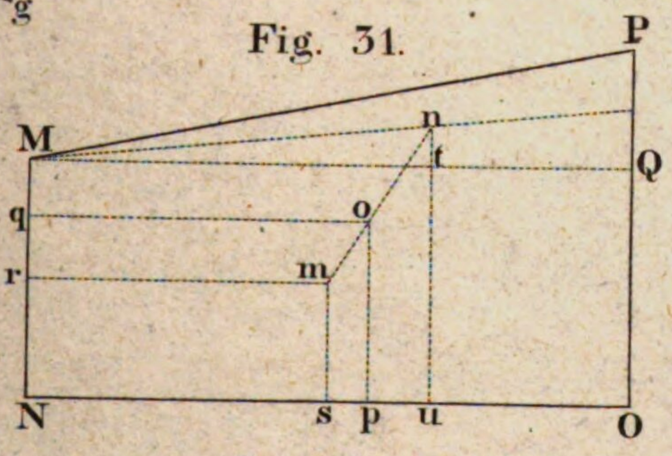

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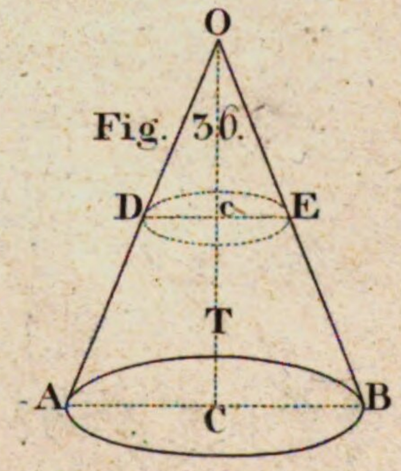

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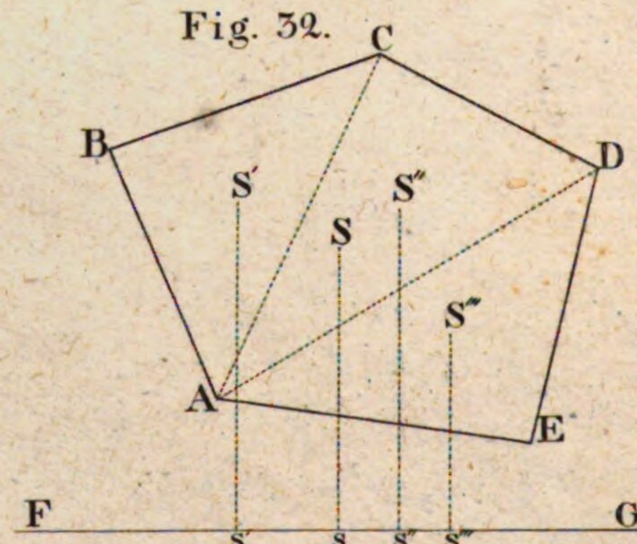


Fig. 39.

Fig. 40.

Jos. Skala sc. Praga.

Fig. 1.

Hornhaspel

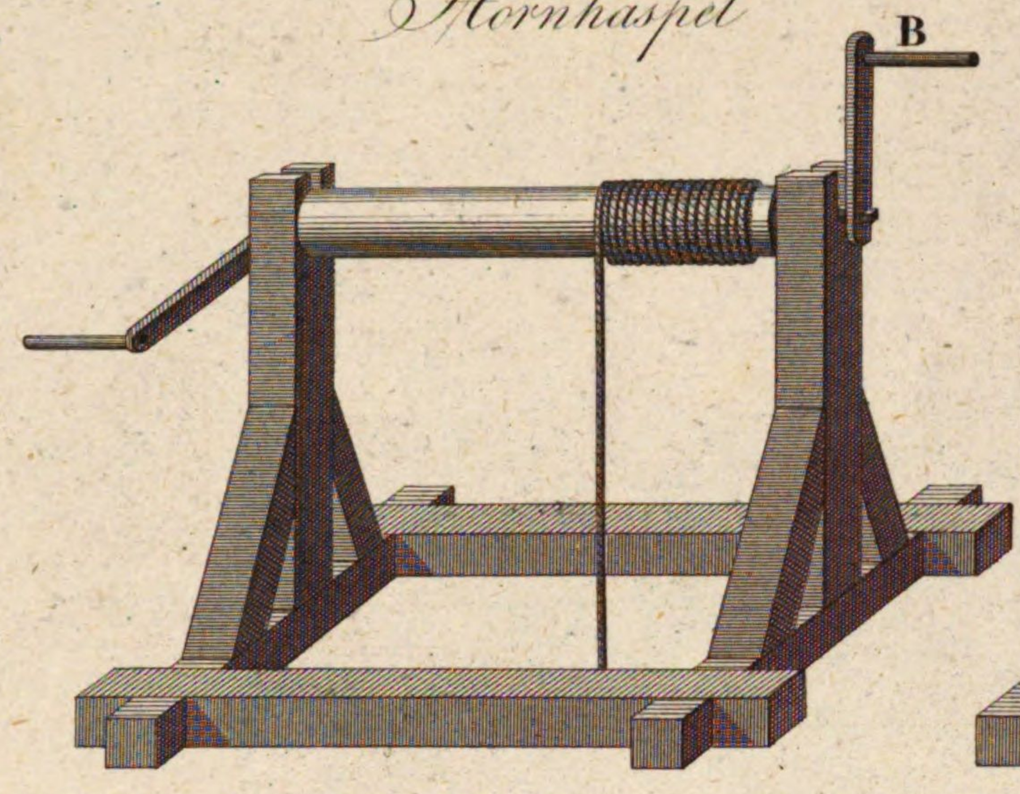
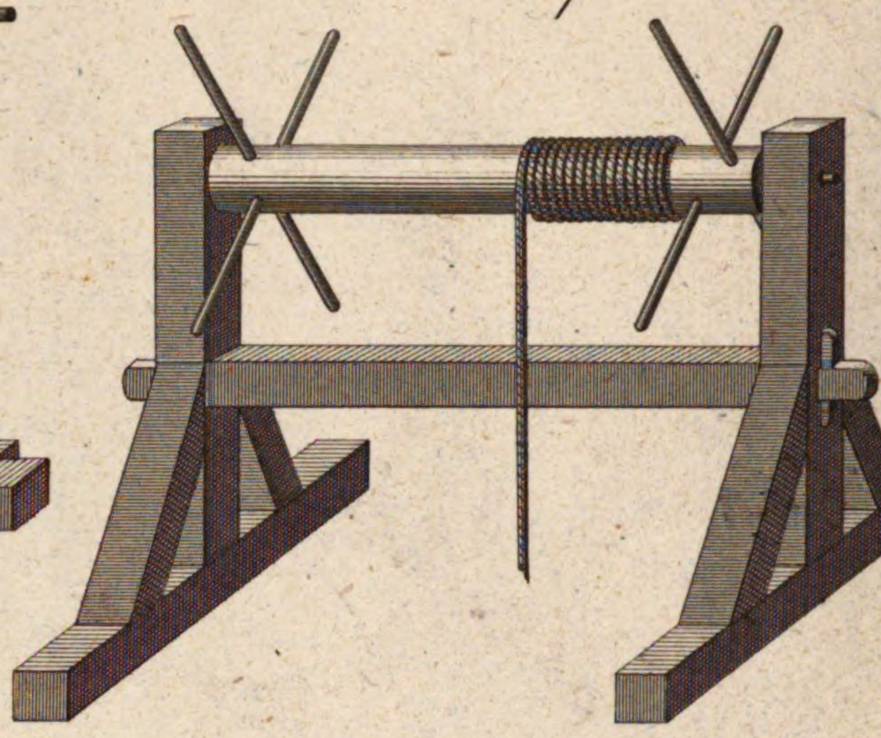


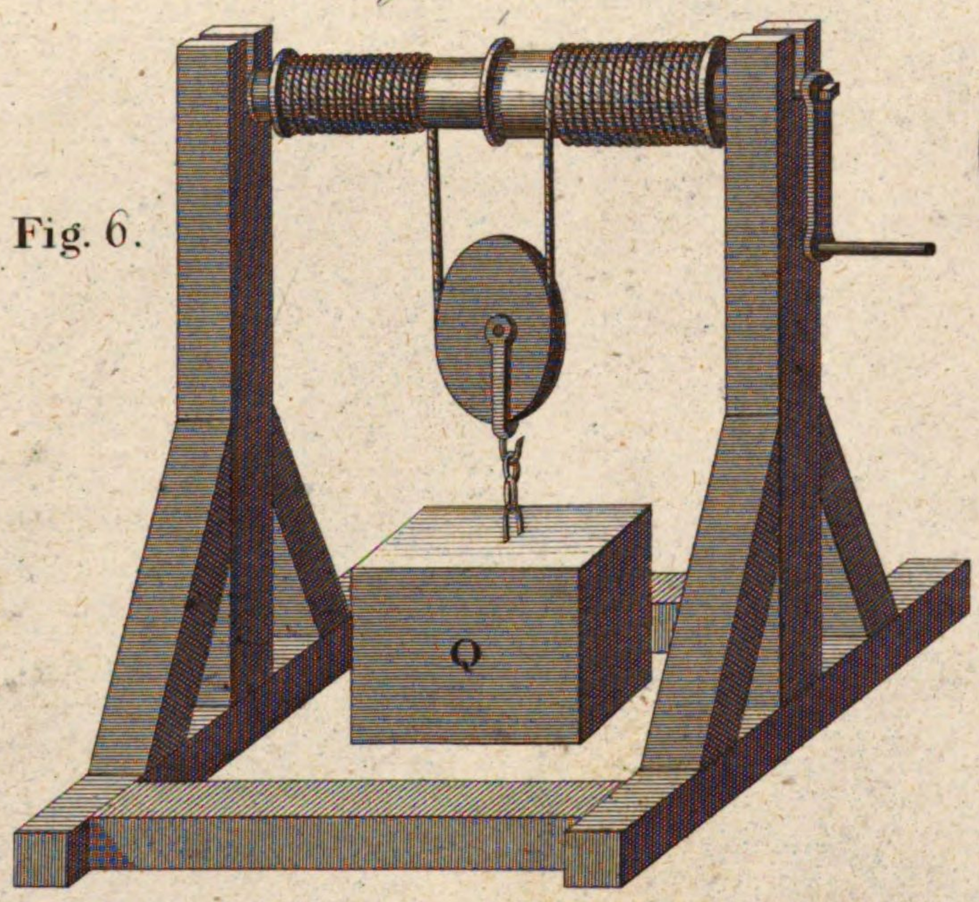
Fig. 2.

Kreuzhaspel



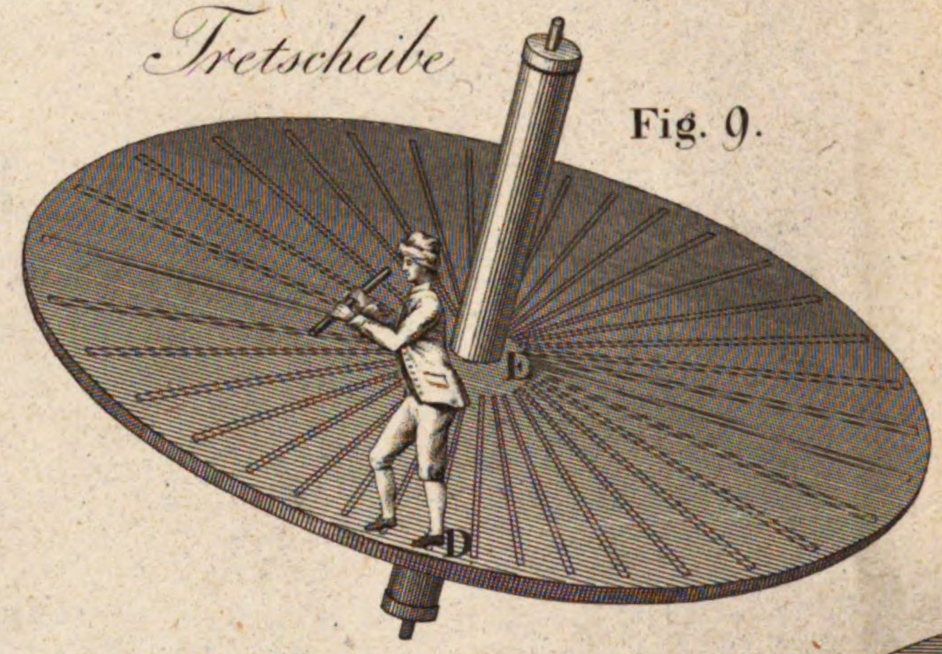
Gegenwinde

Fig. 6.



Tretscheibe

Fig. 9.



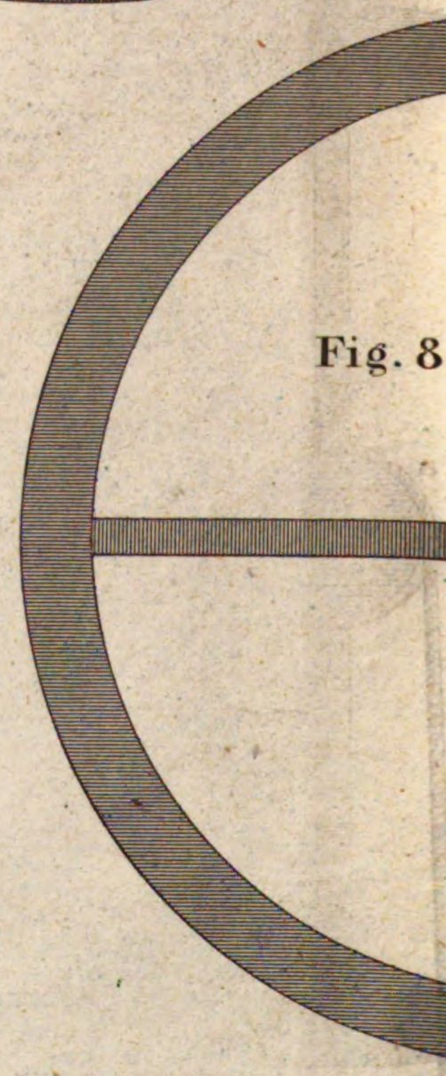


Fig. 8

Erdwinde

Fig. 5.

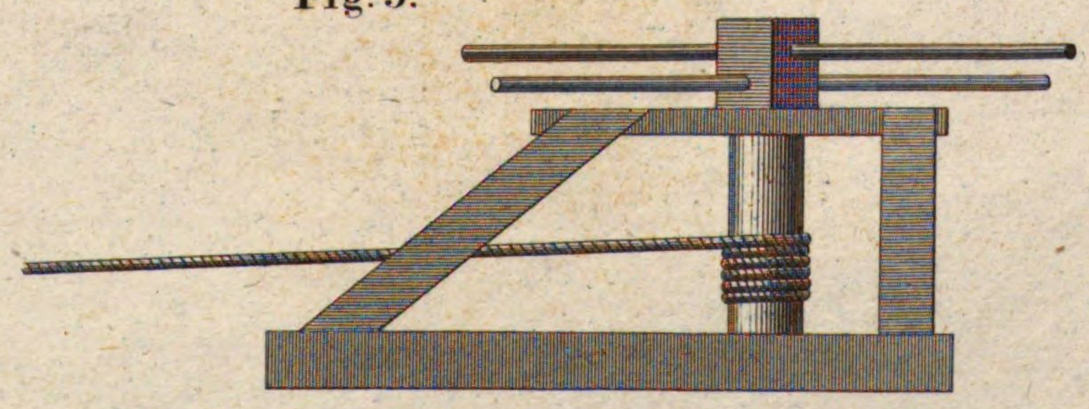
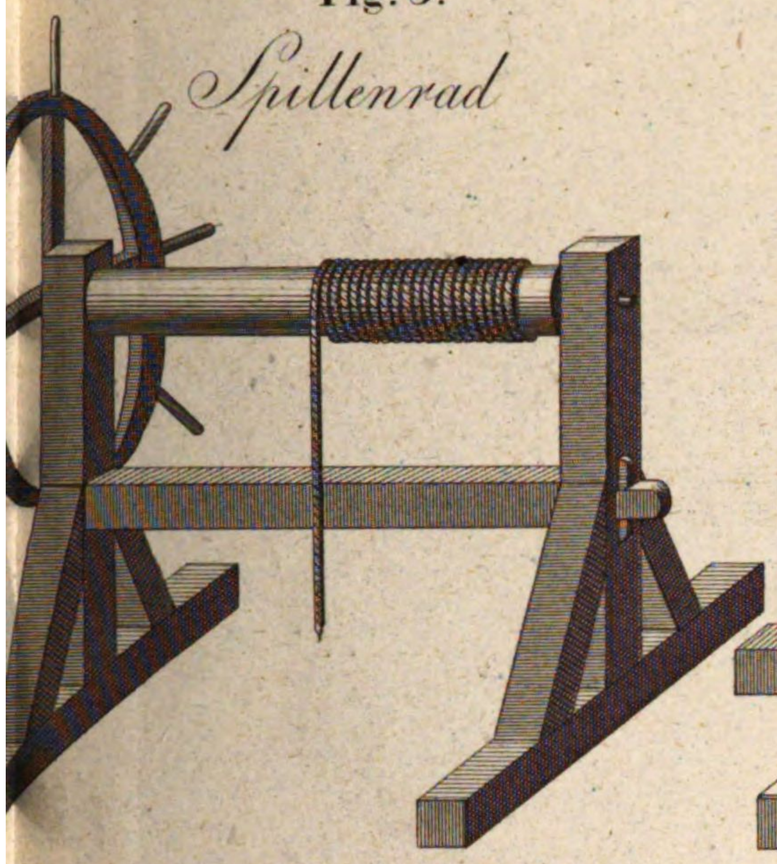


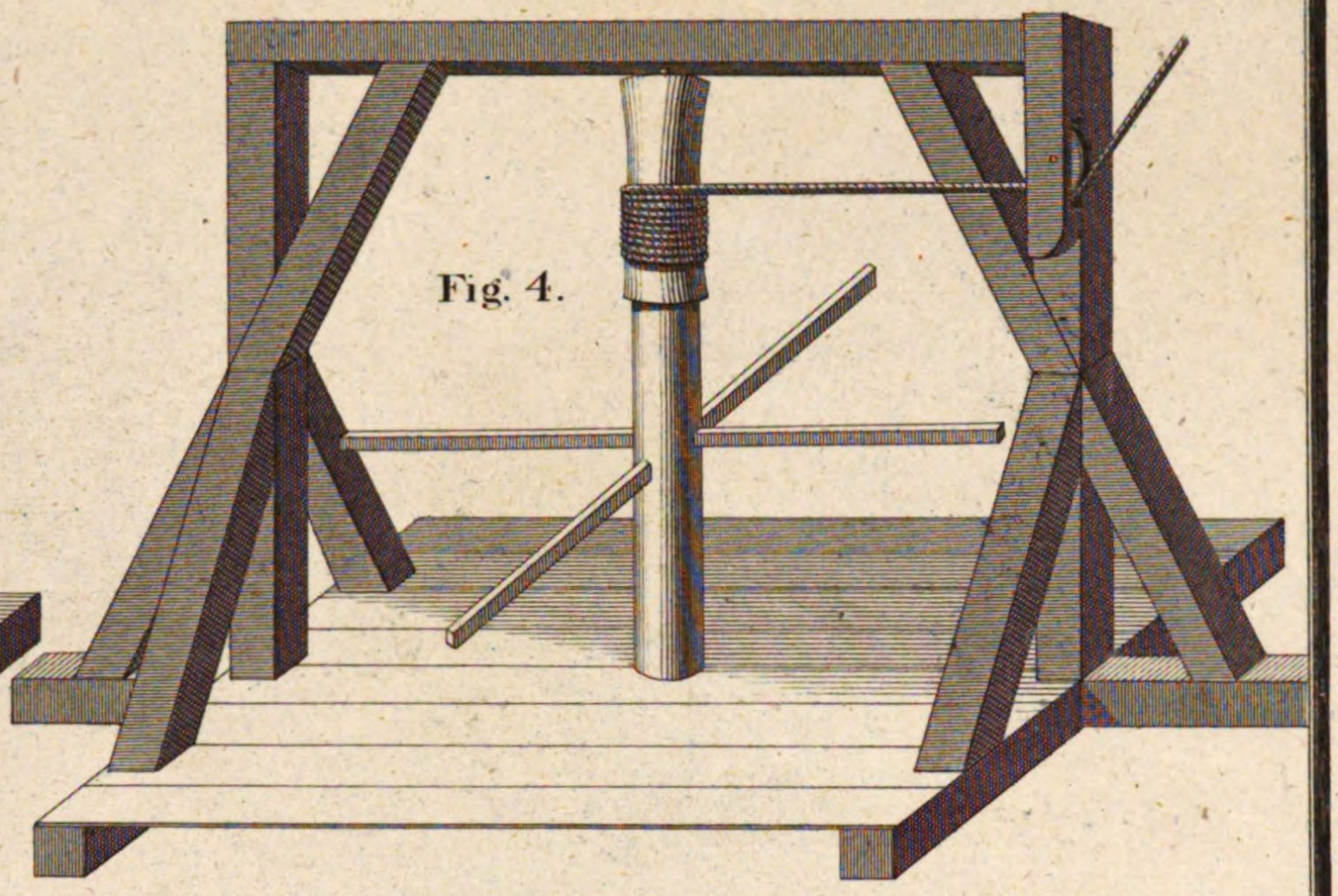
Fig. 3.

Spillenrad



Winde

Fig. 4.



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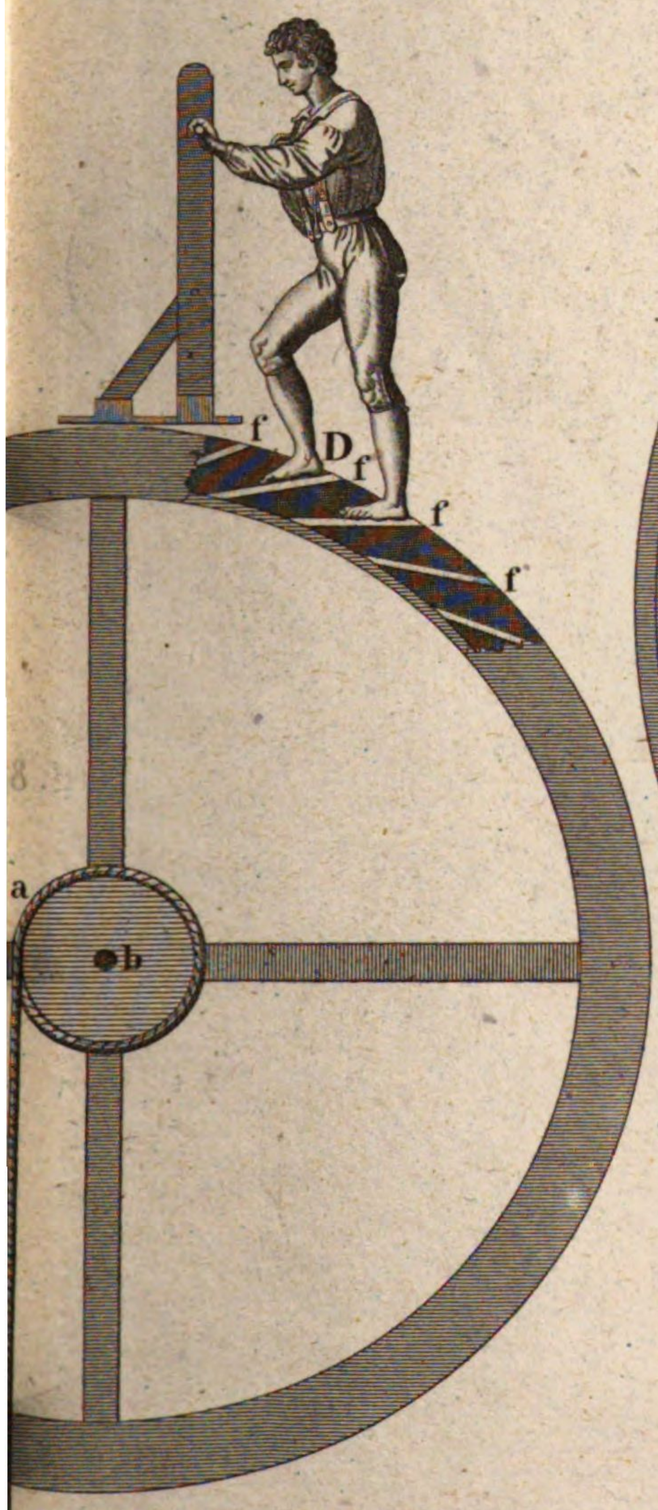

Tretrad Nº 1.

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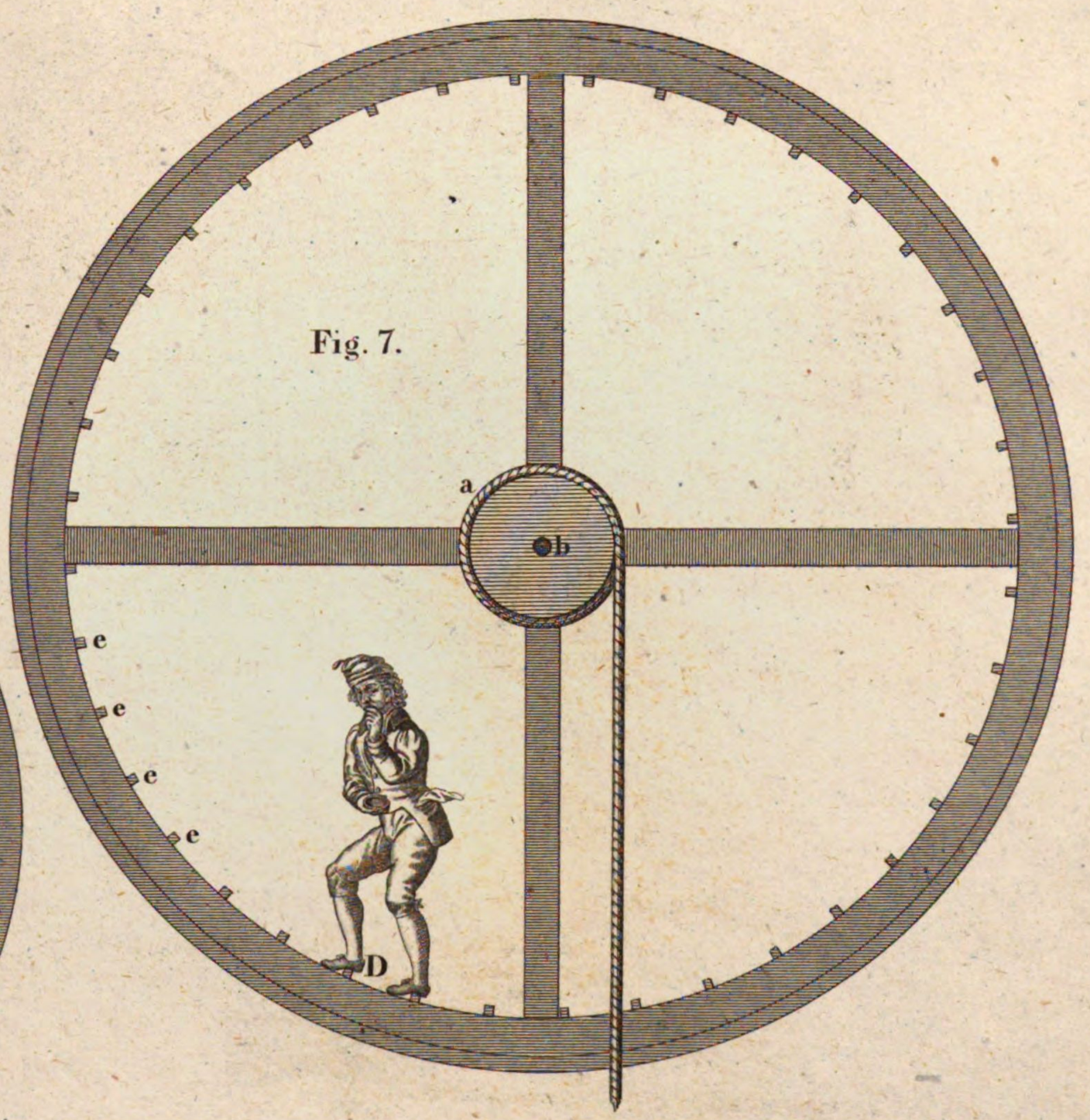
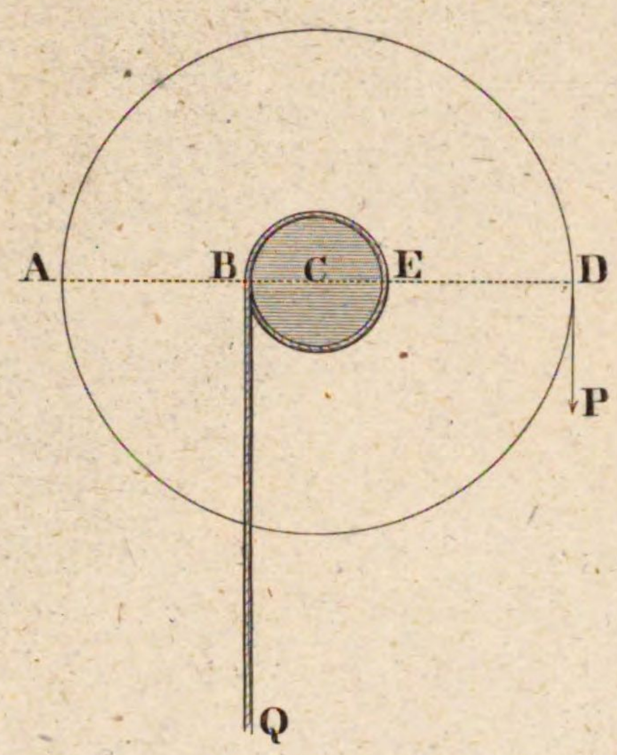


M. Aigner sc. Viennæ.

Fig. 1.



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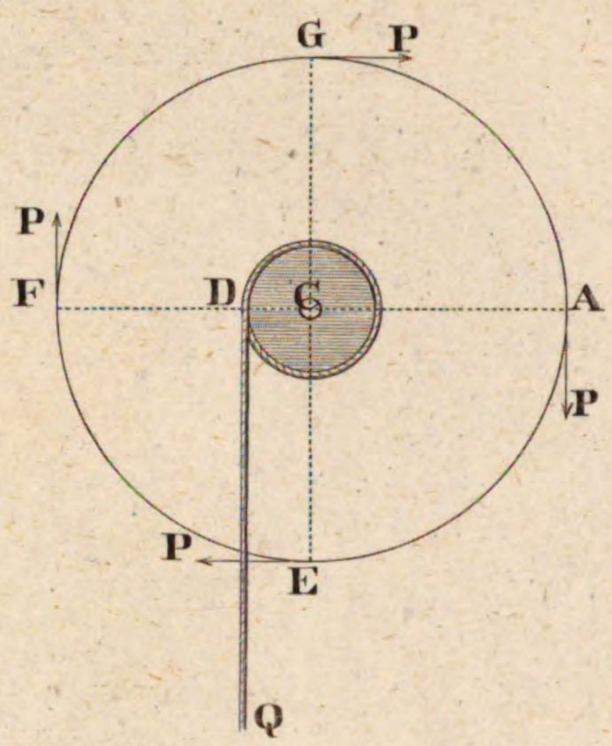
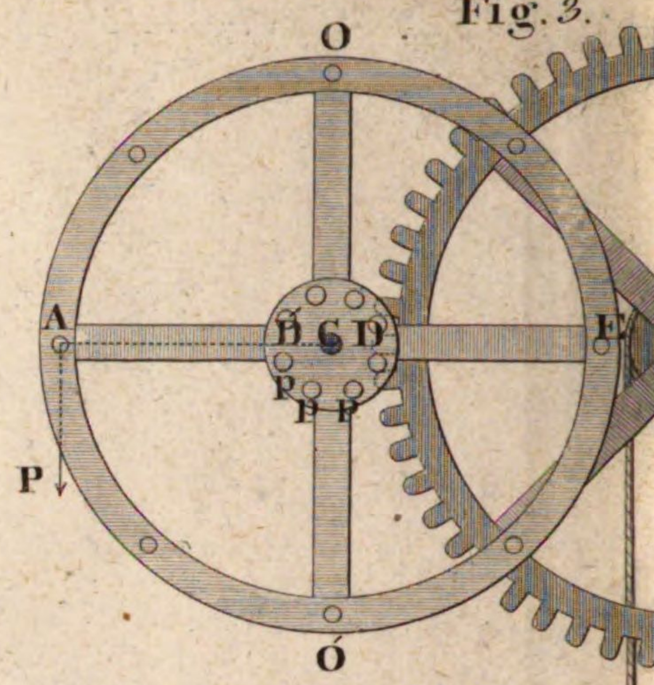


Fig. 3.



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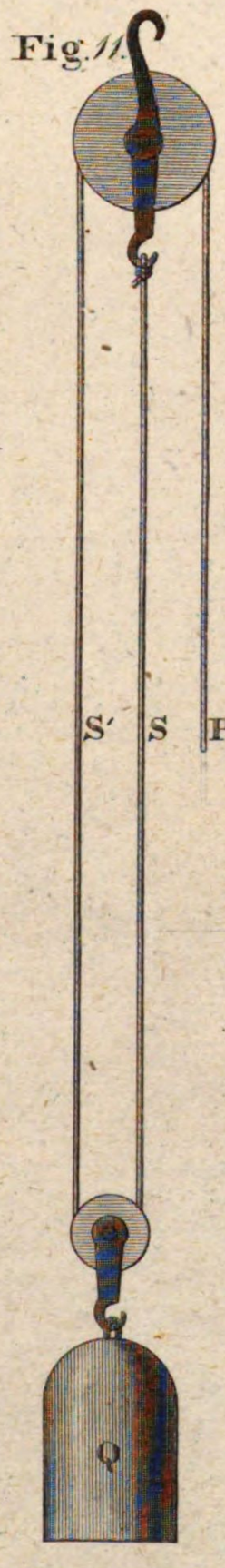

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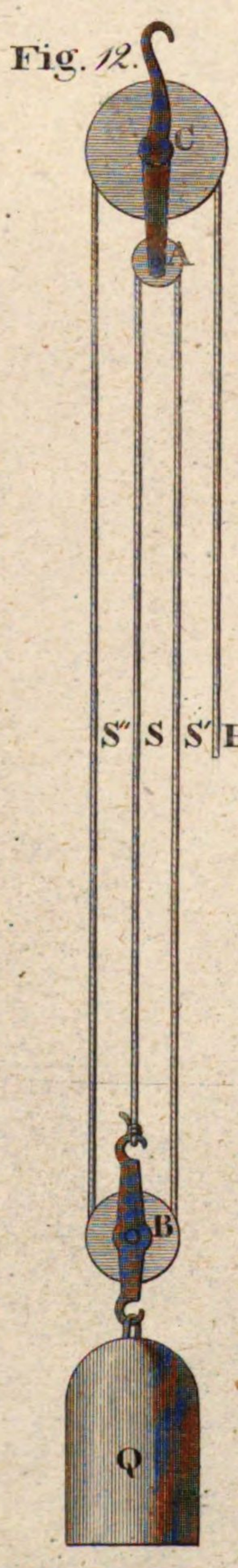

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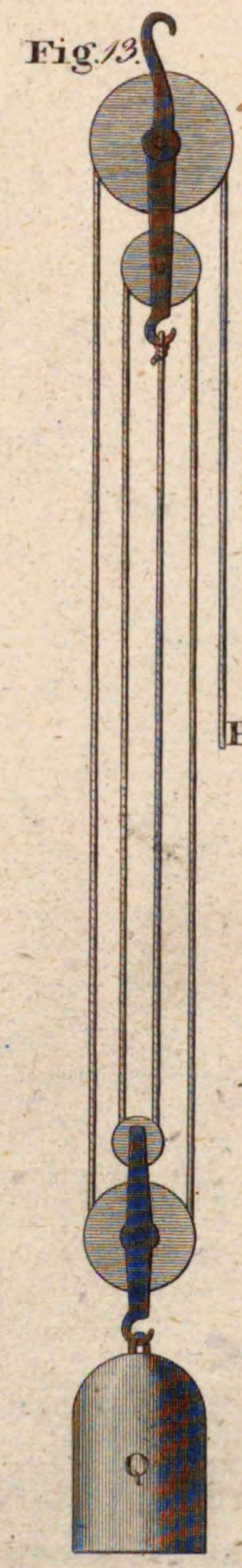

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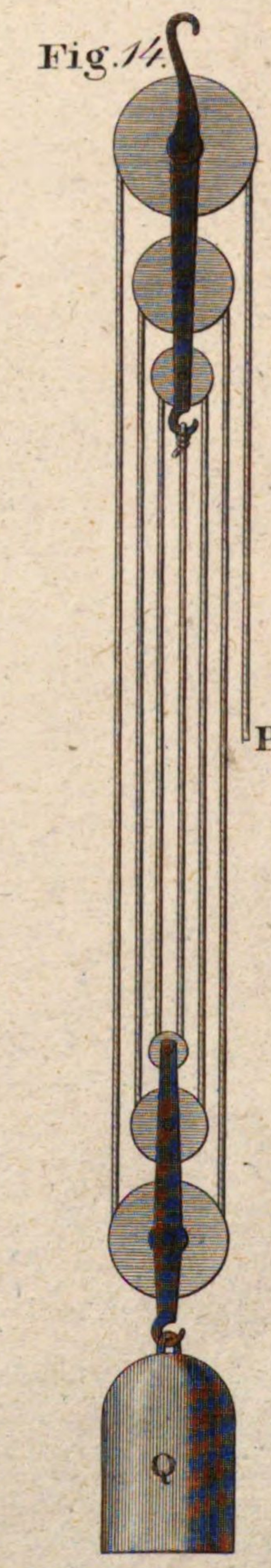

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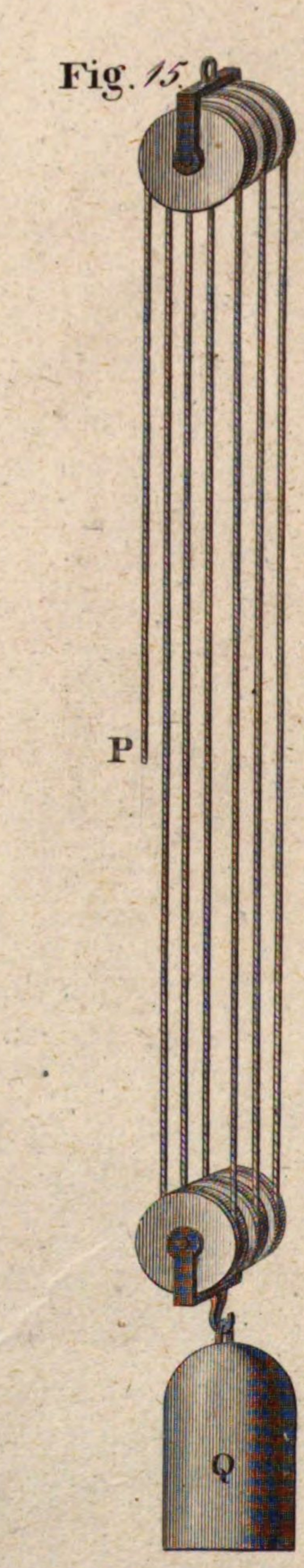

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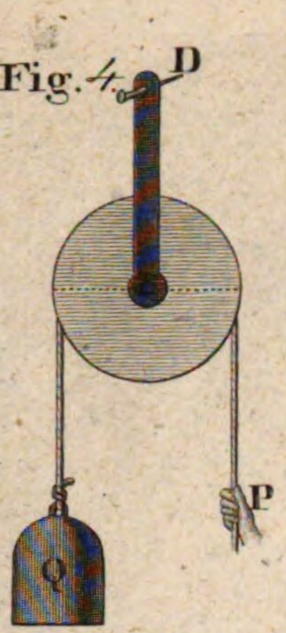

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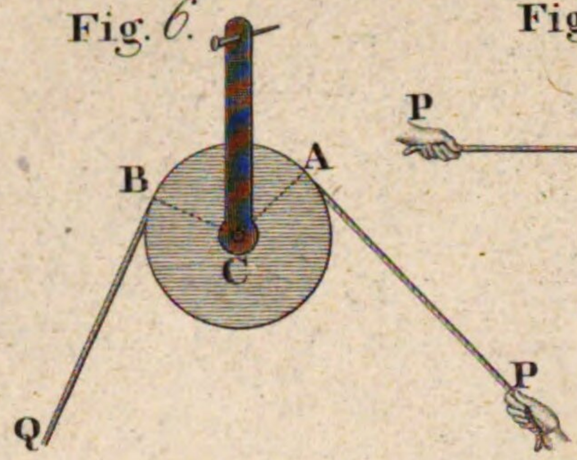

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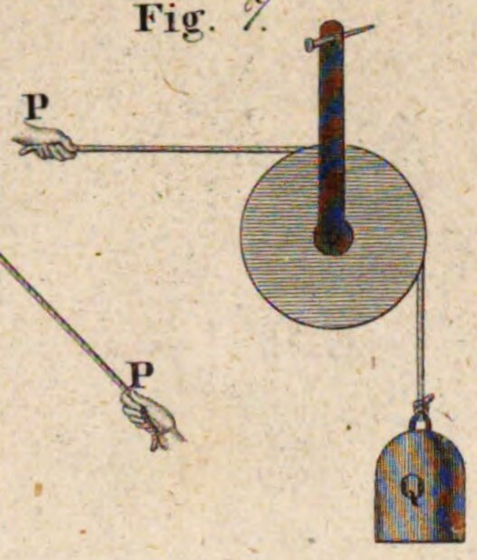

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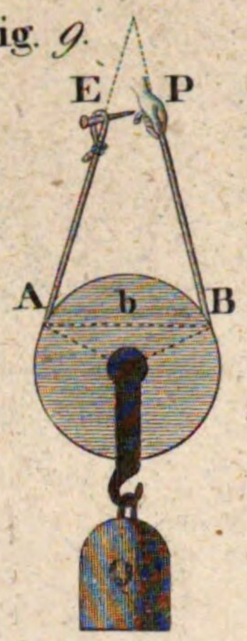

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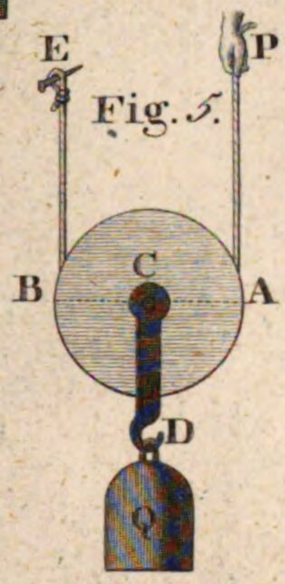

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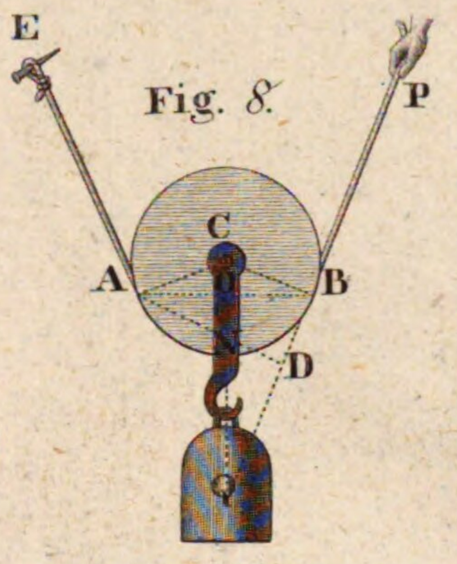

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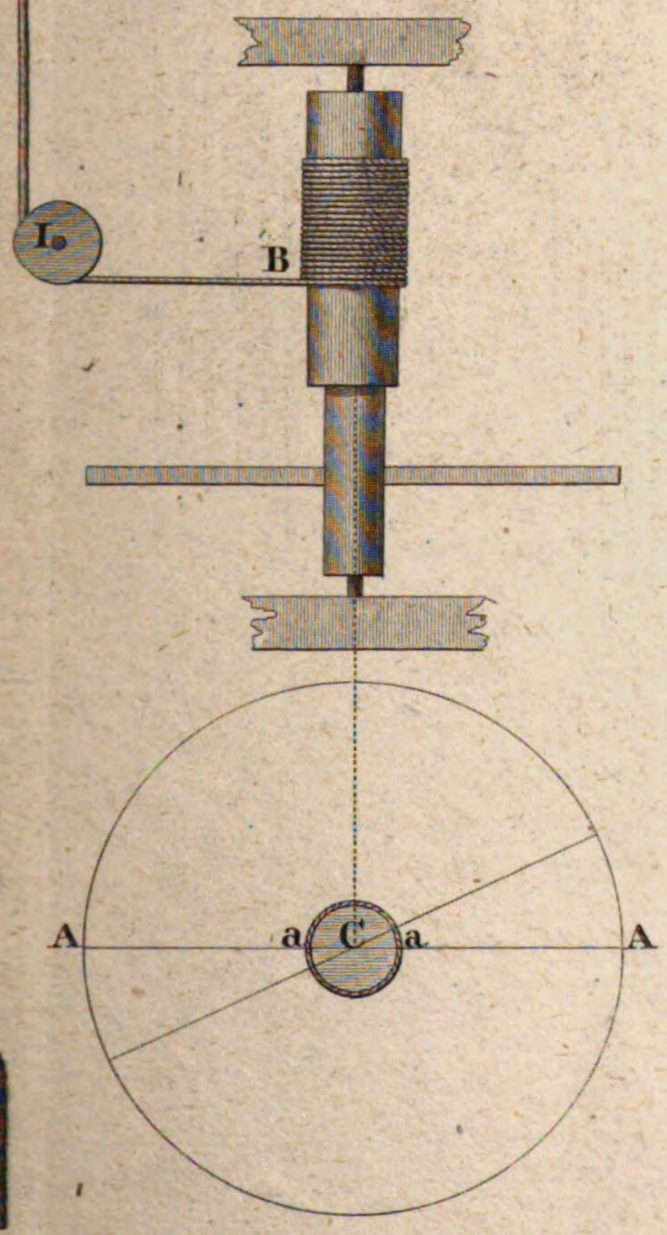

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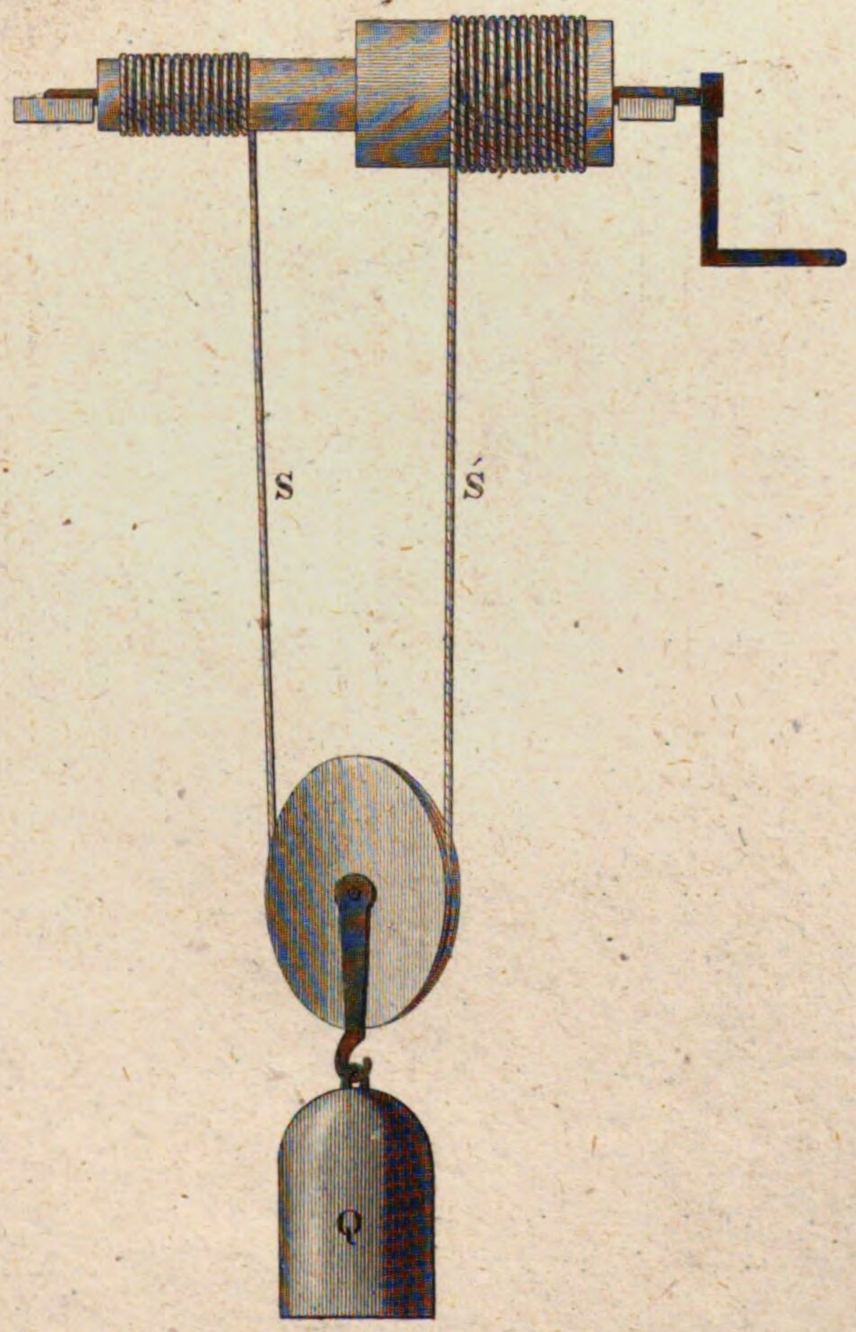

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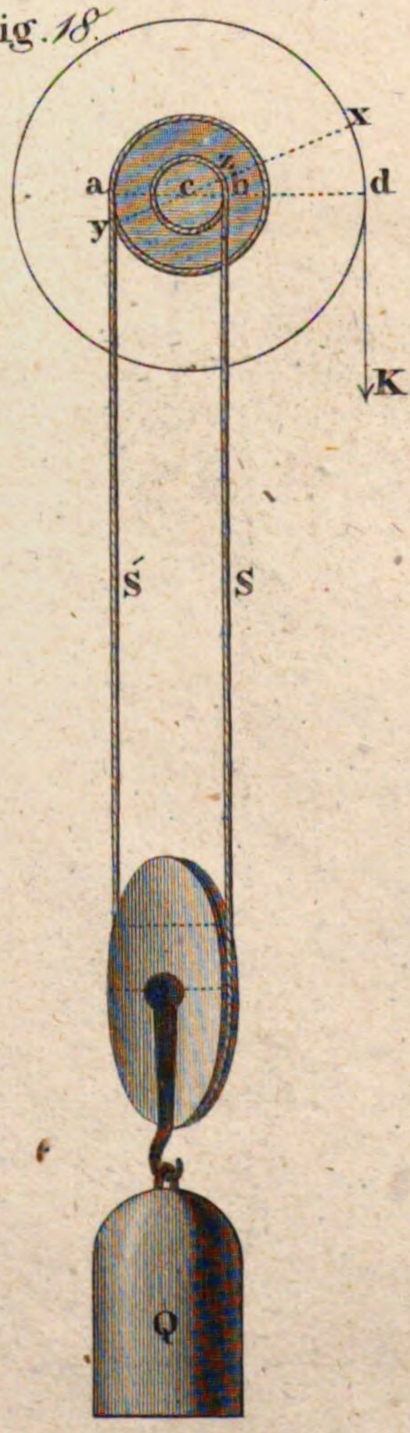

Jos. Skala sc. Pragæ.

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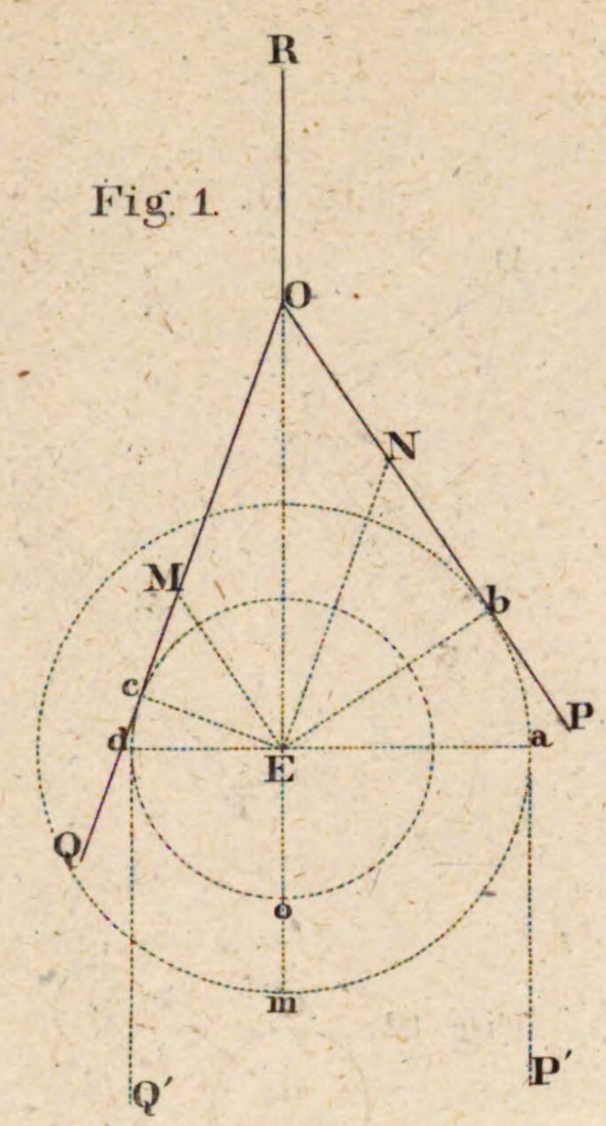

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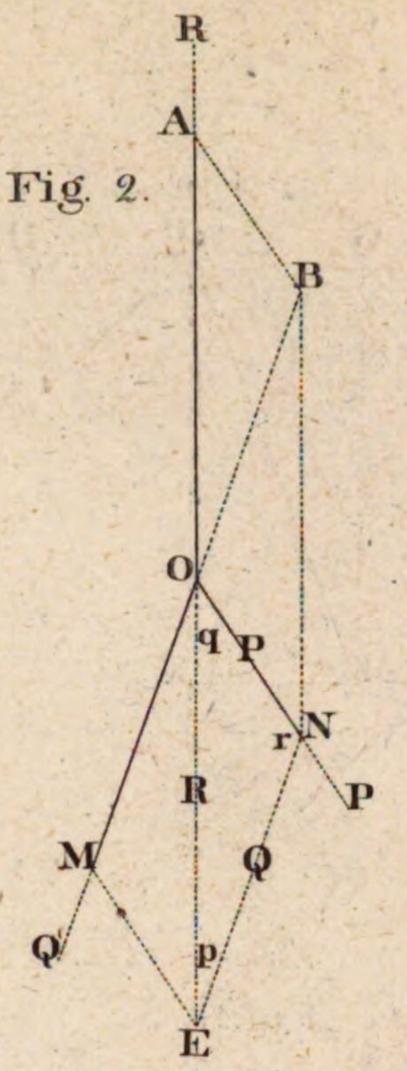

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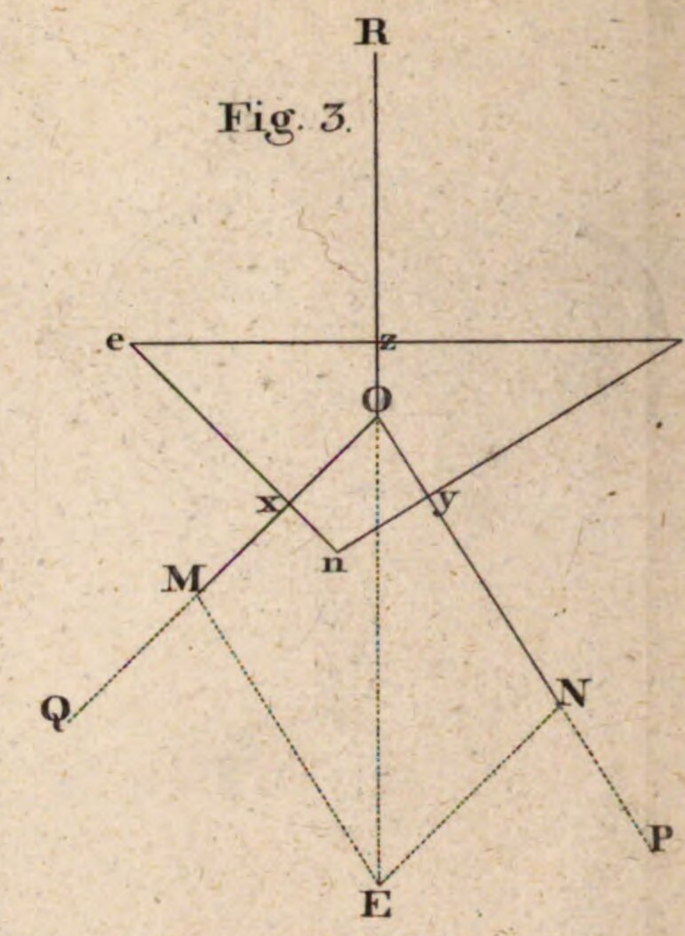

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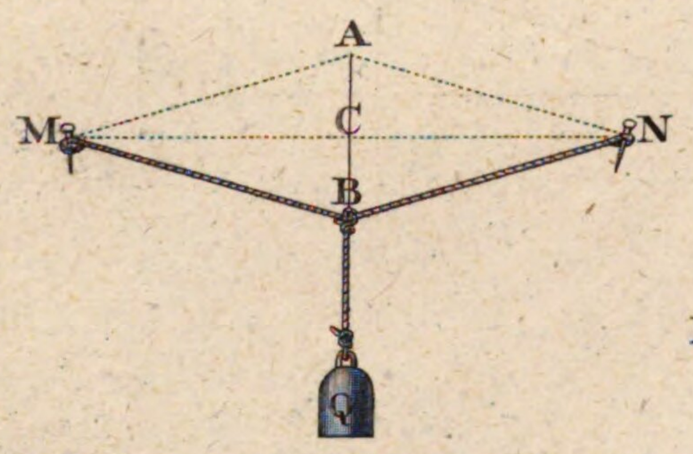

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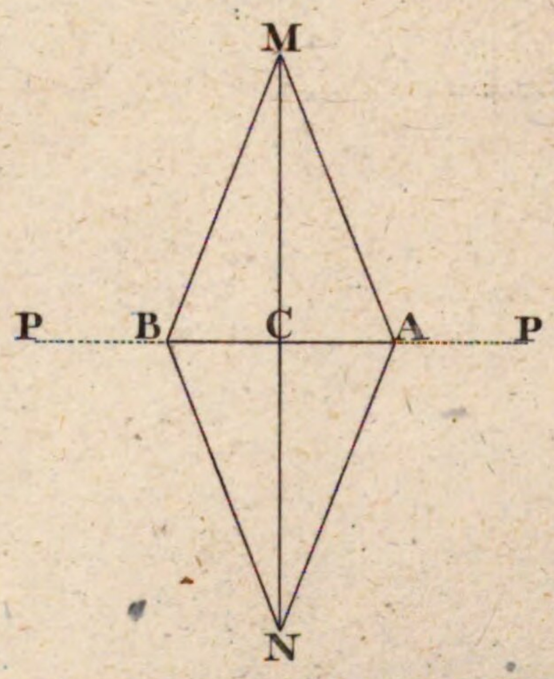

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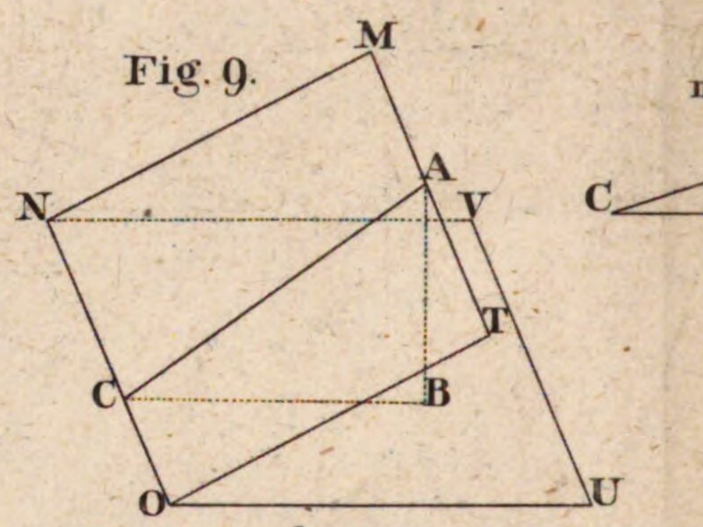

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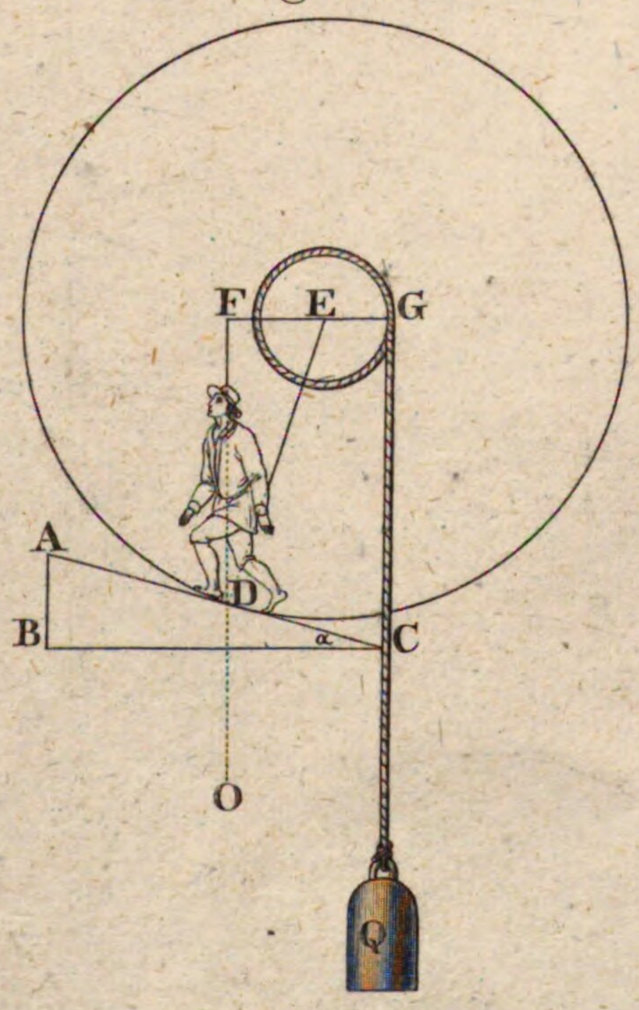

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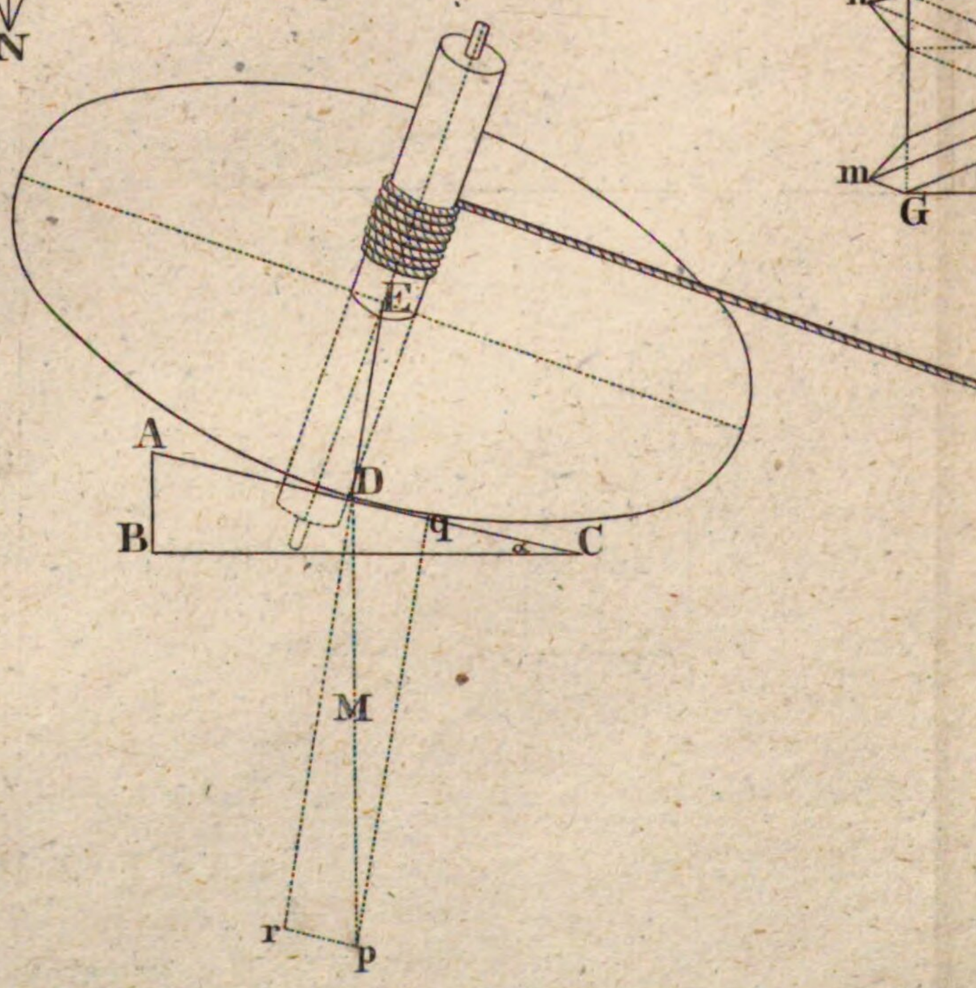

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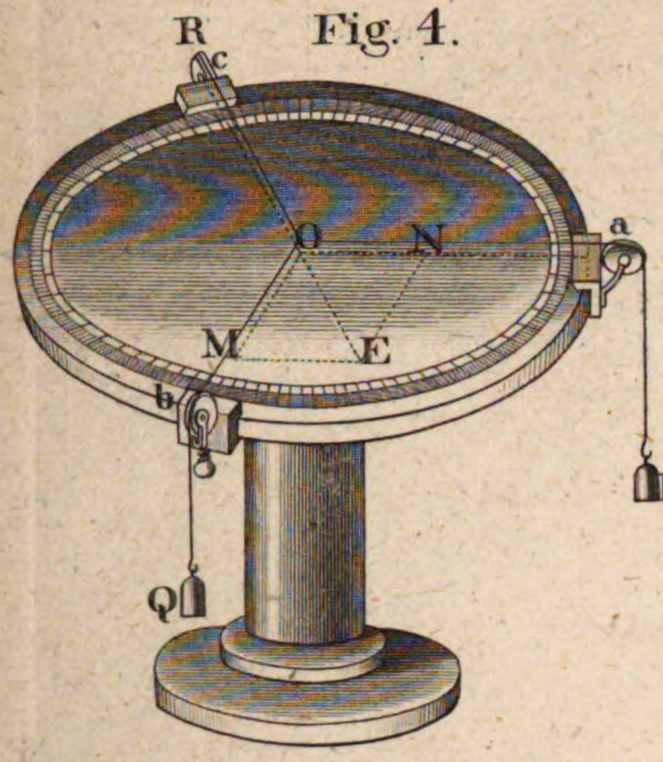

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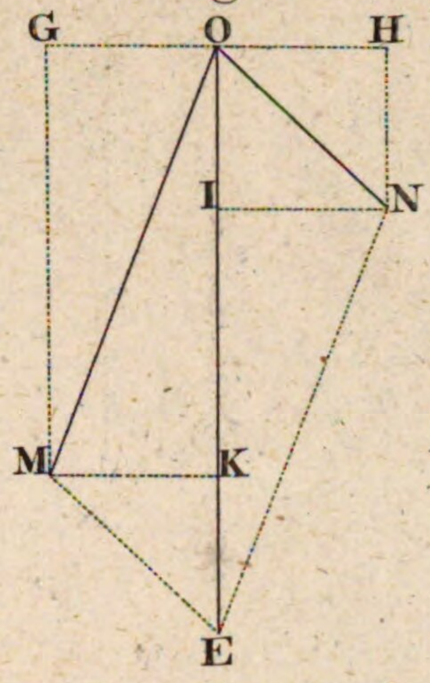

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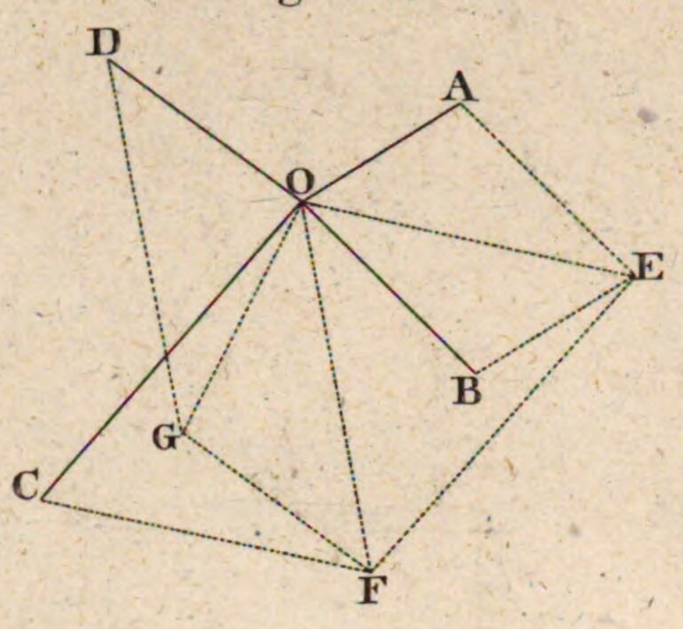

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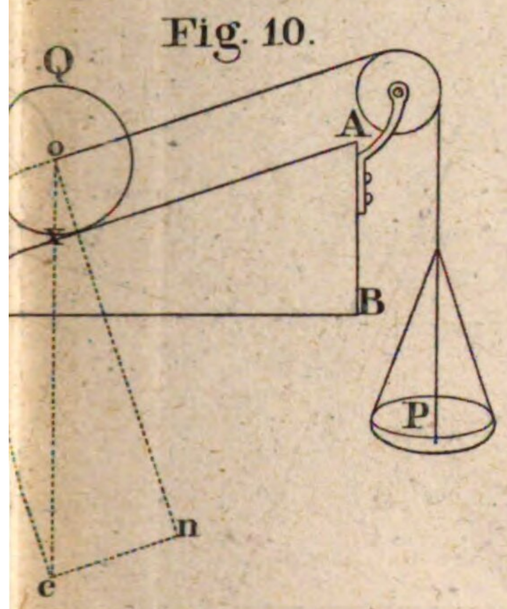

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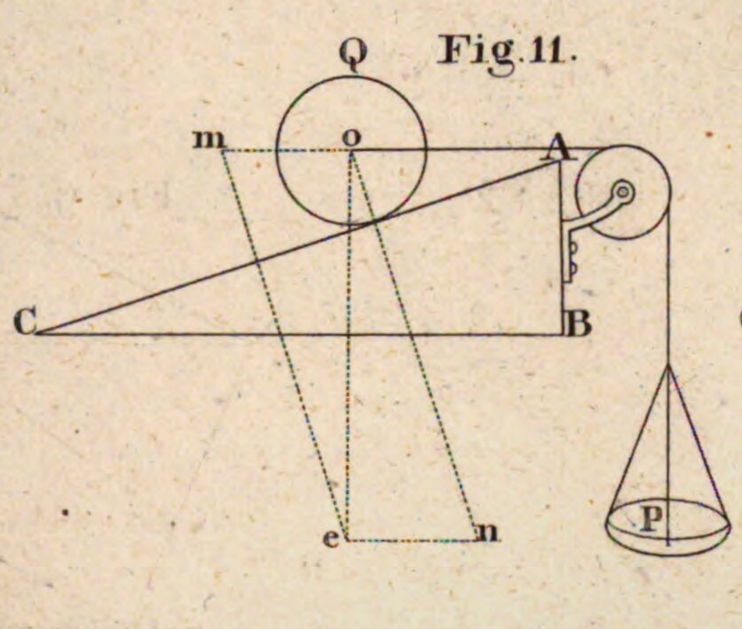

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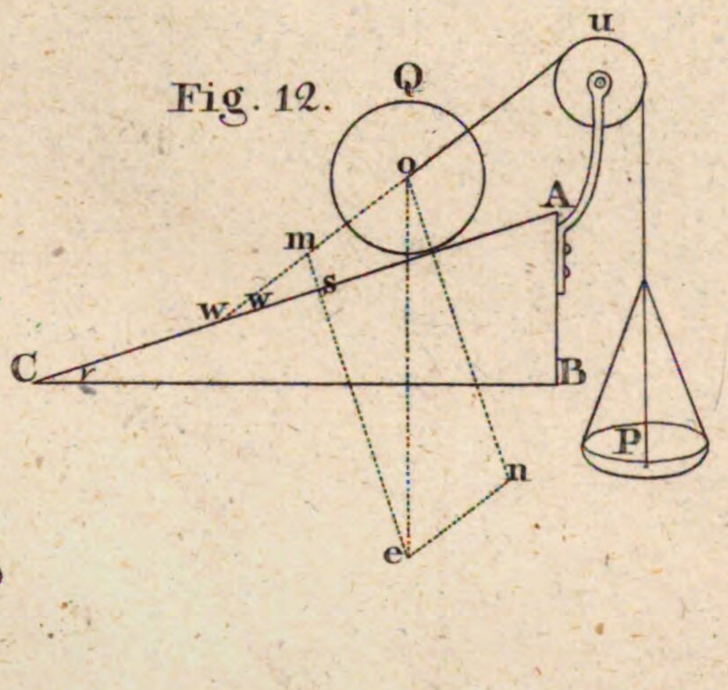

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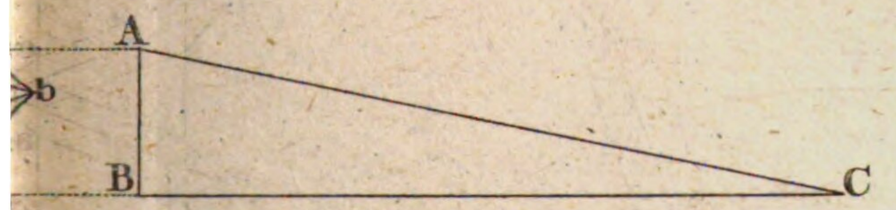

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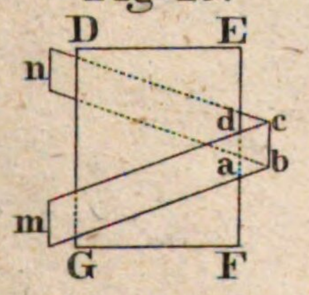

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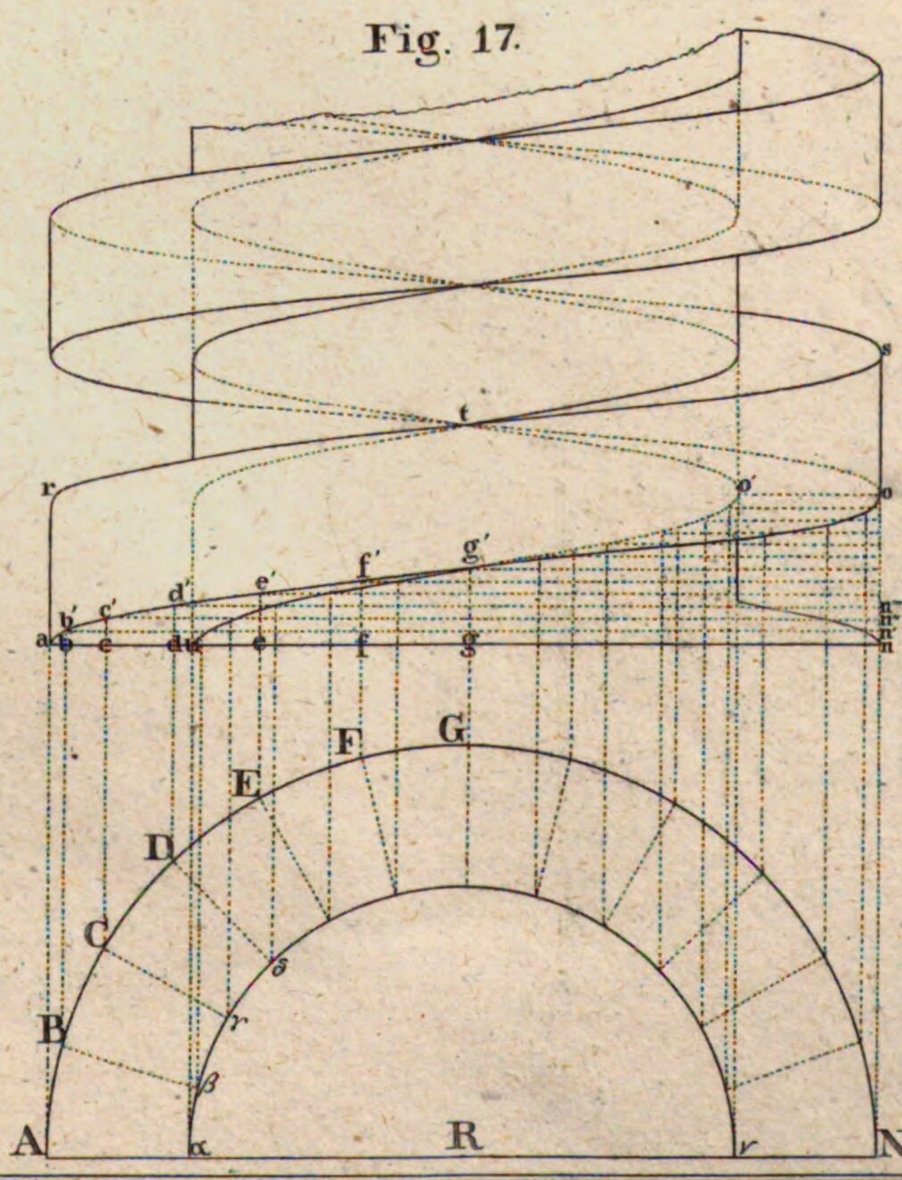

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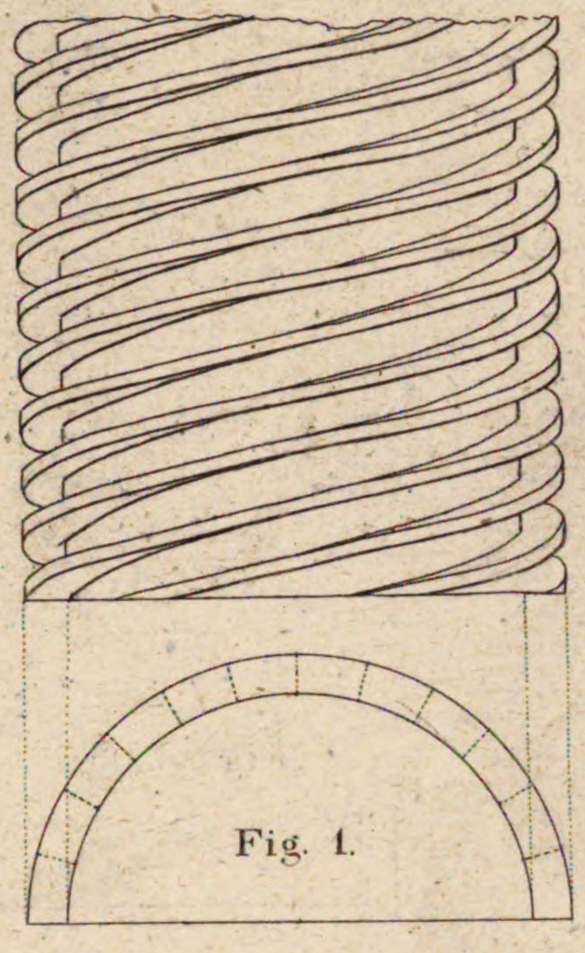

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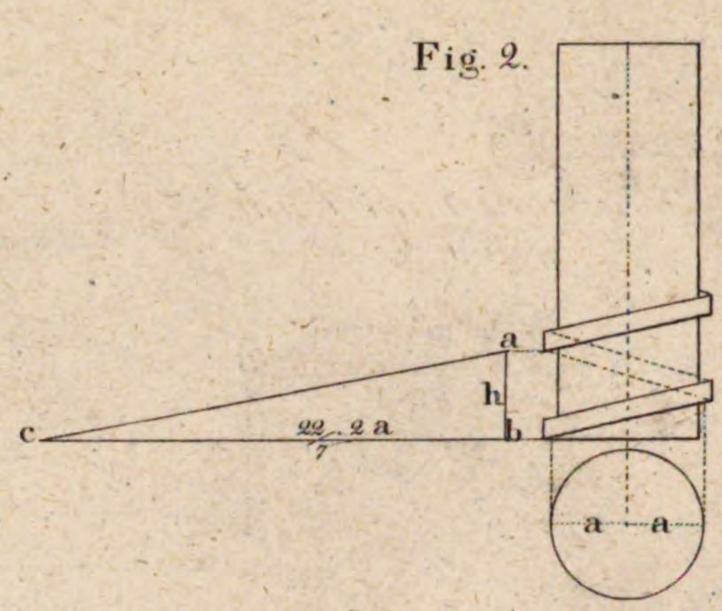

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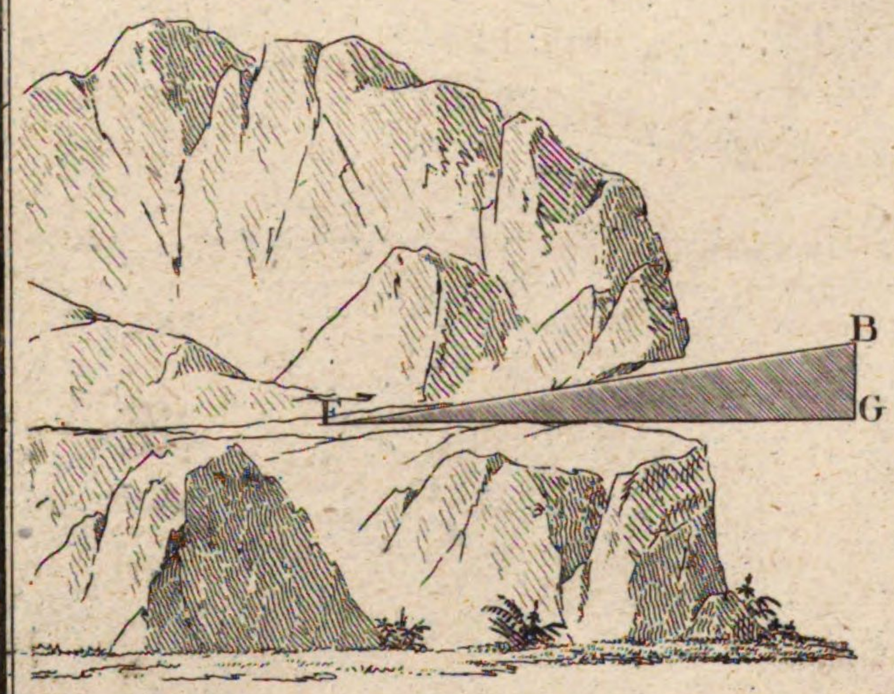

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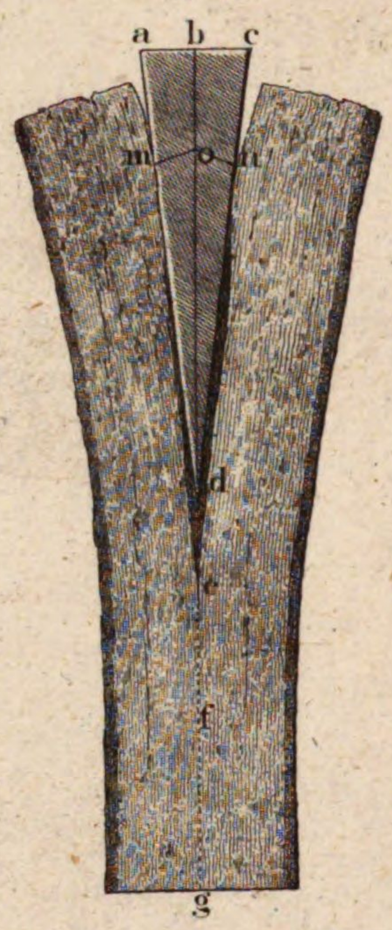

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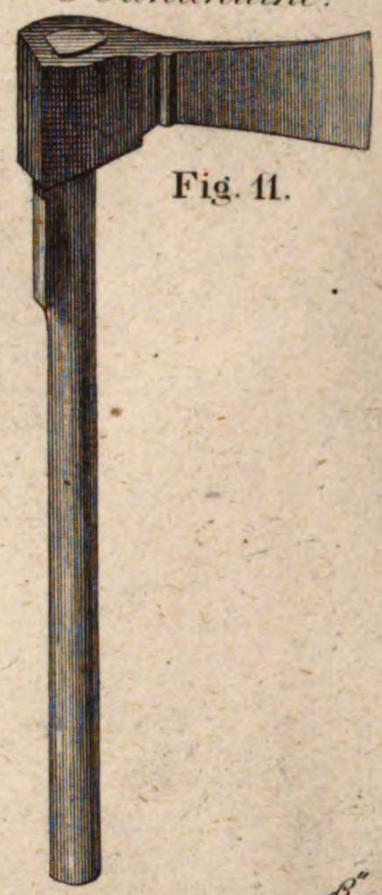

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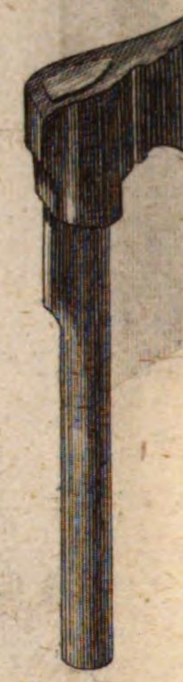

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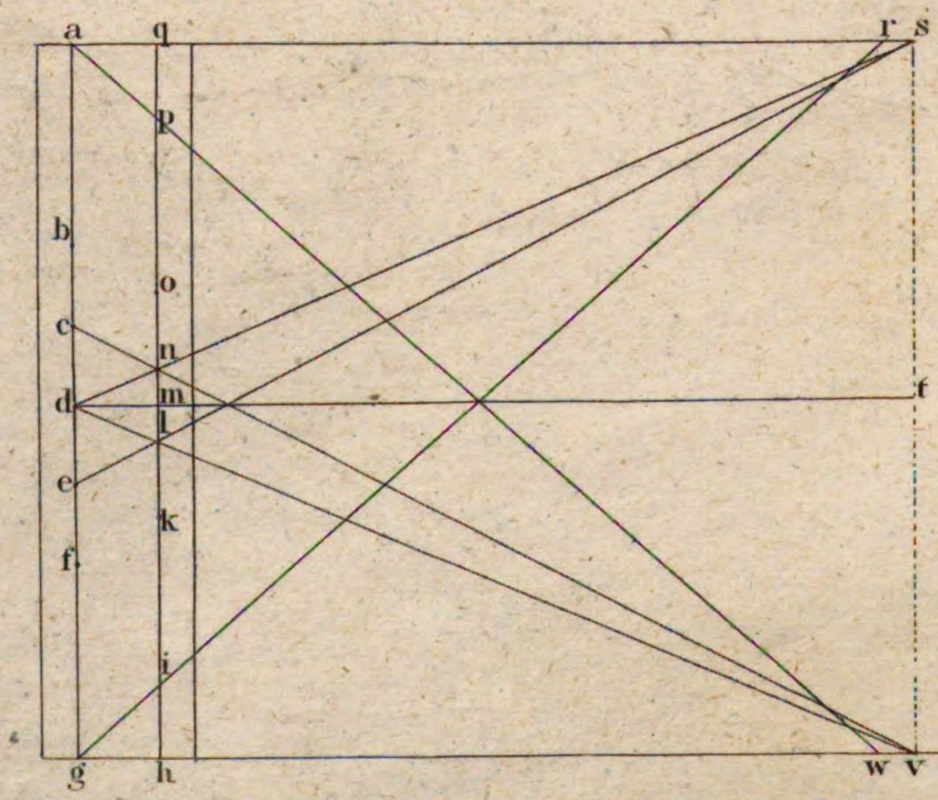

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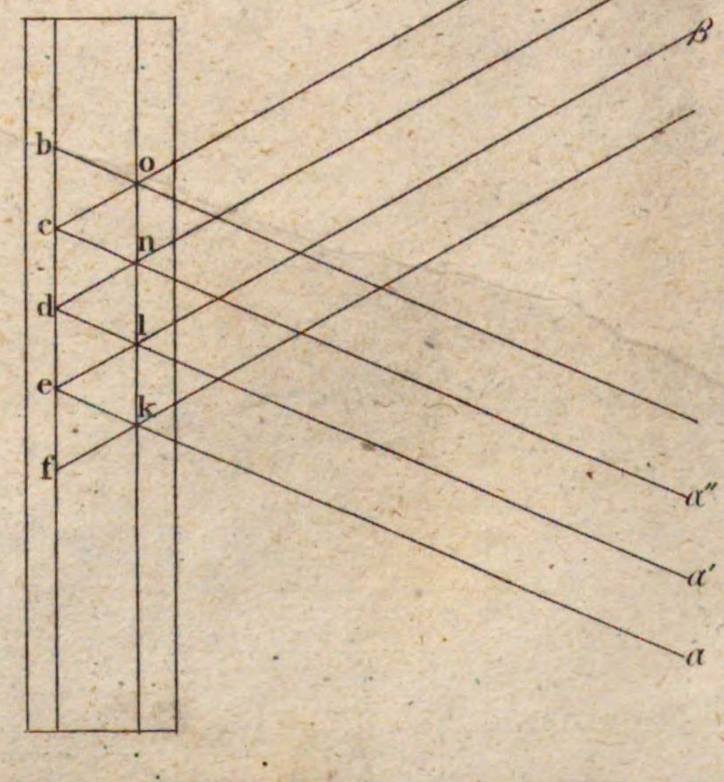

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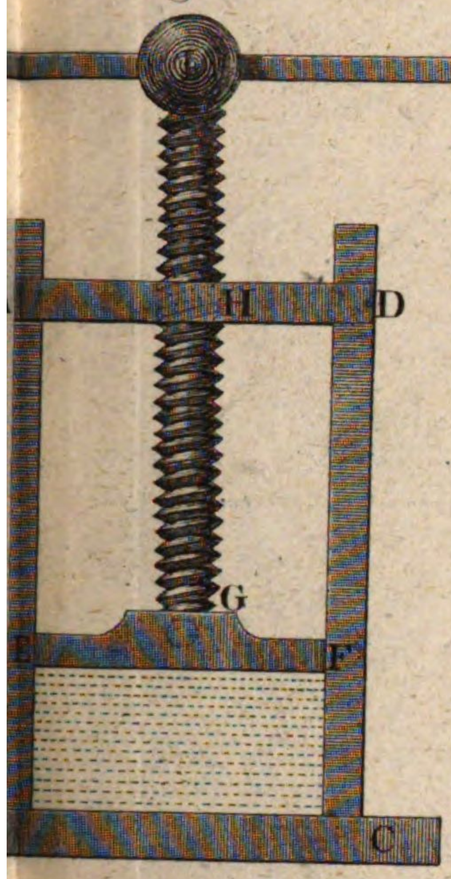

Schraube ohne Ende.

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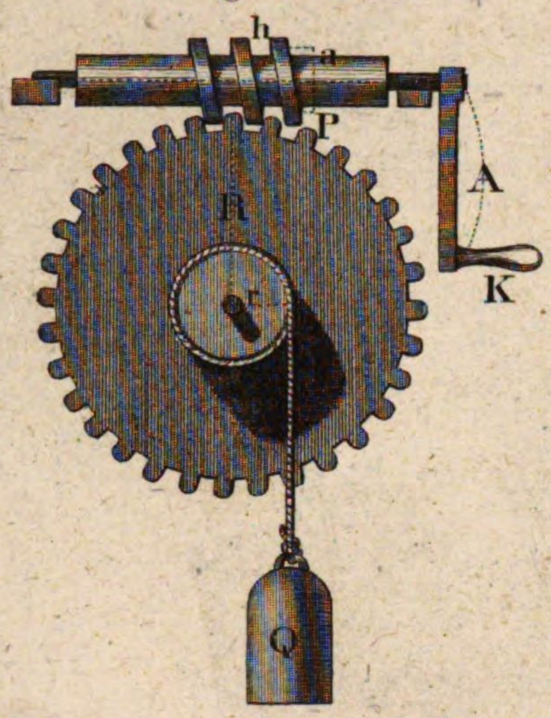

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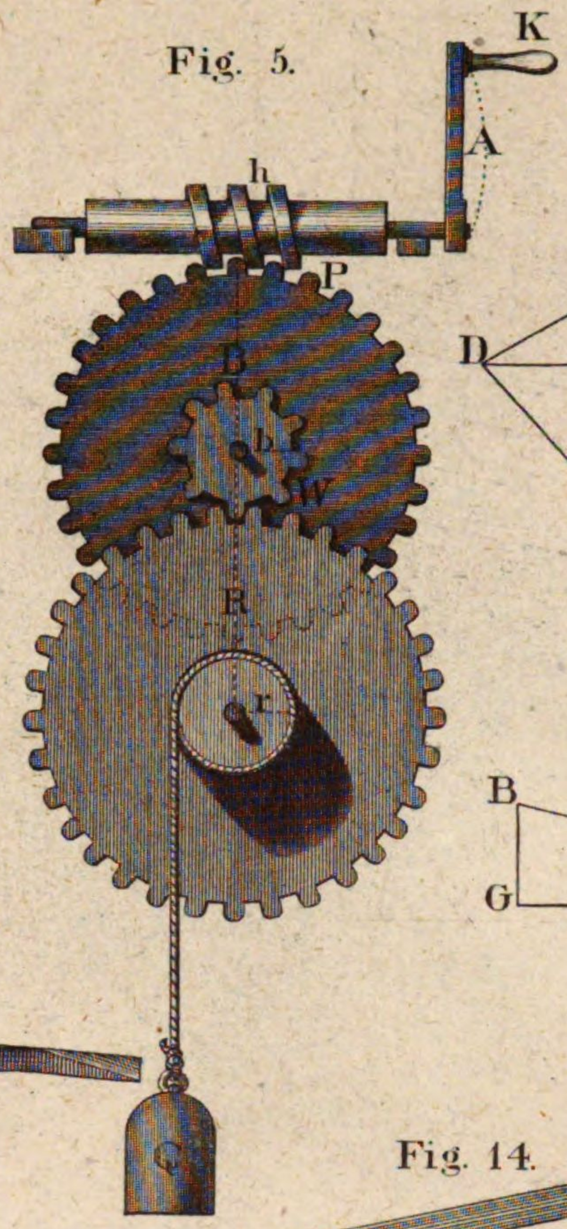

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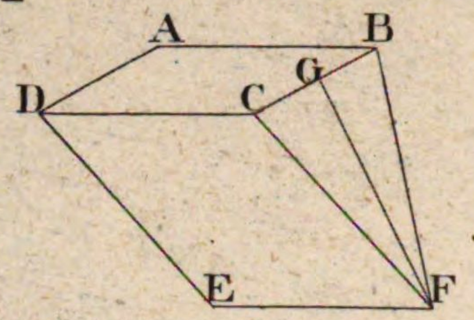

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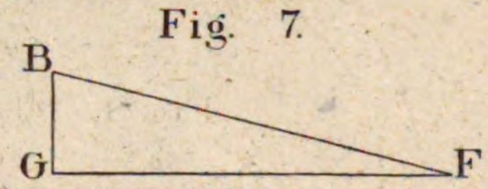

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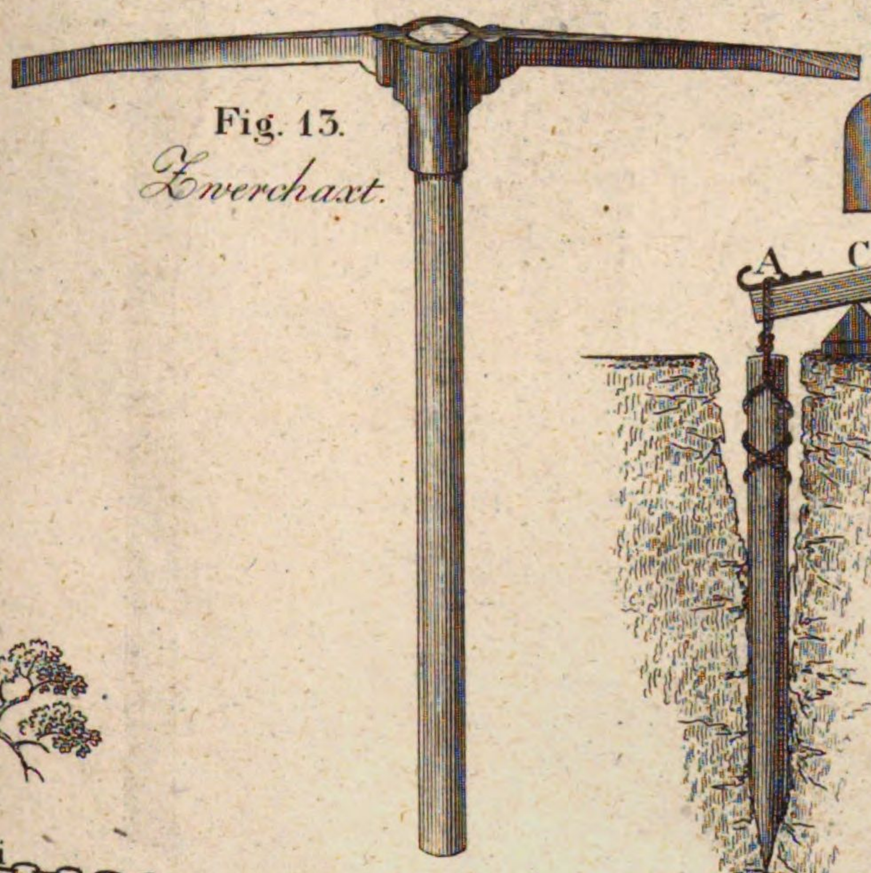

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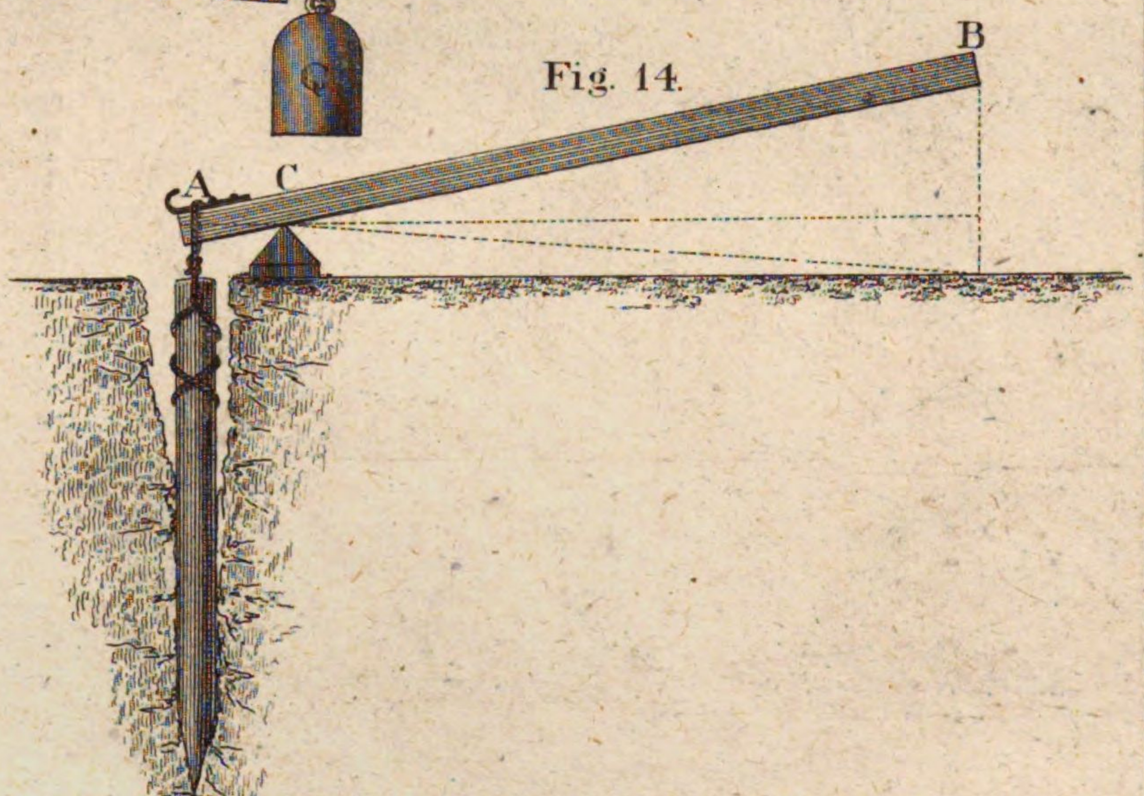

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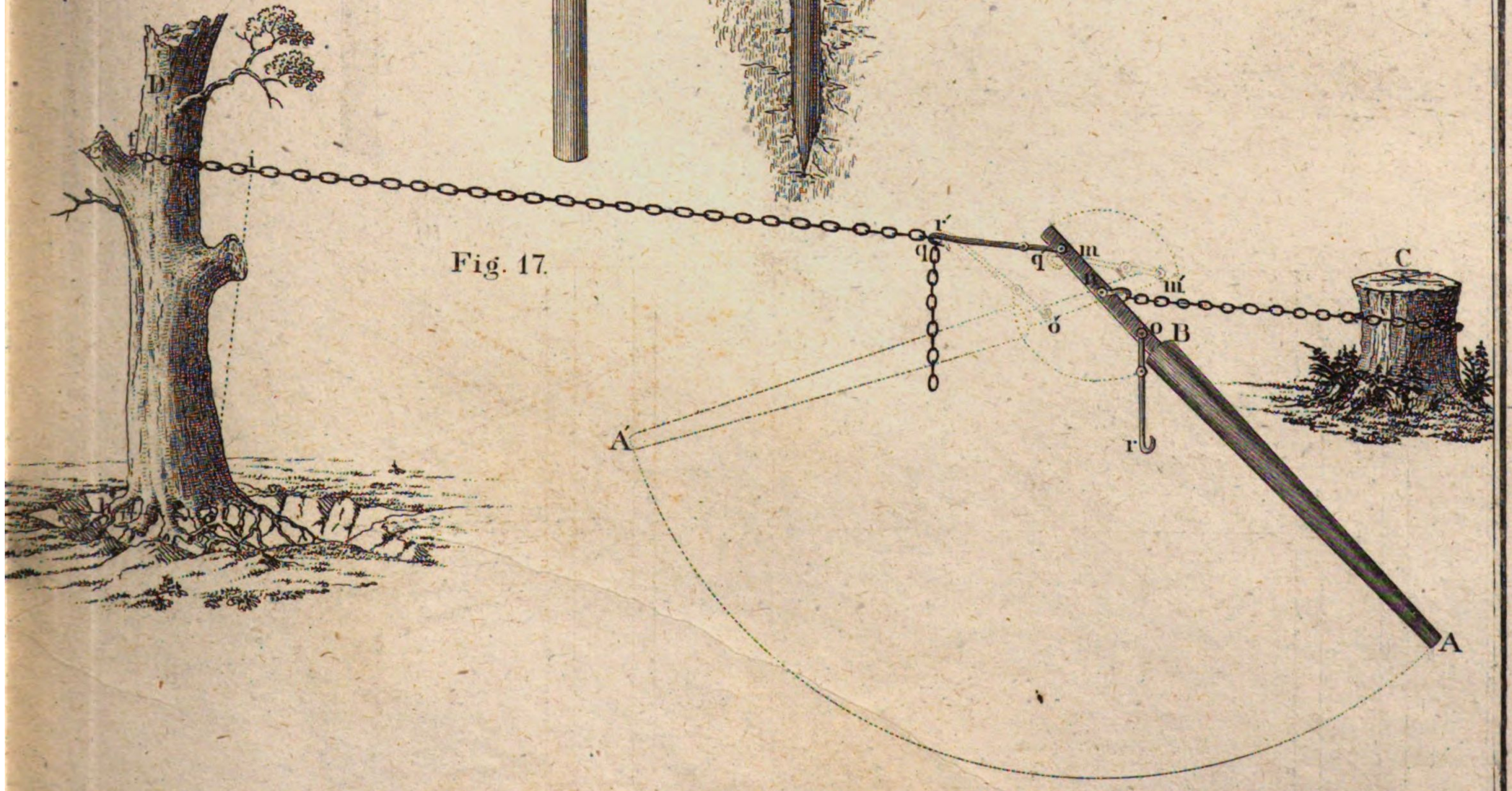

Winde mit Vorgelege

Französische Winde

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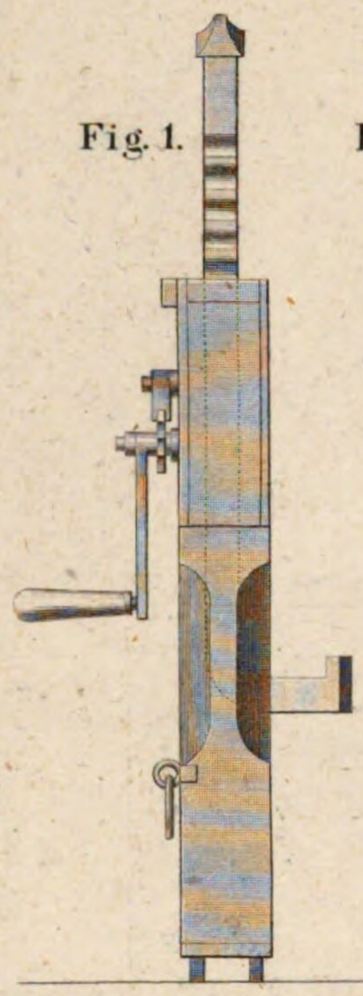

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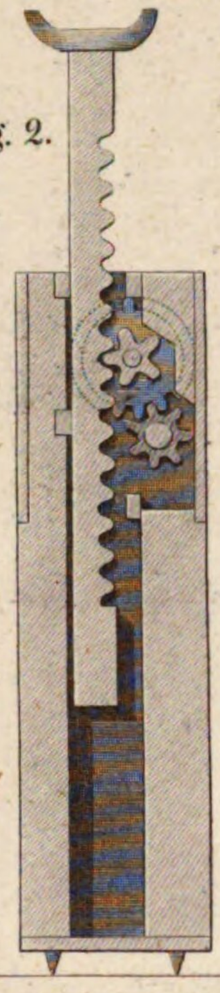

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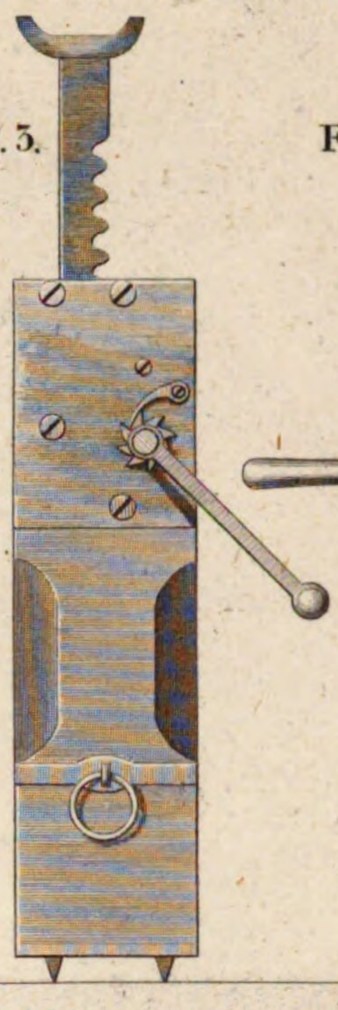

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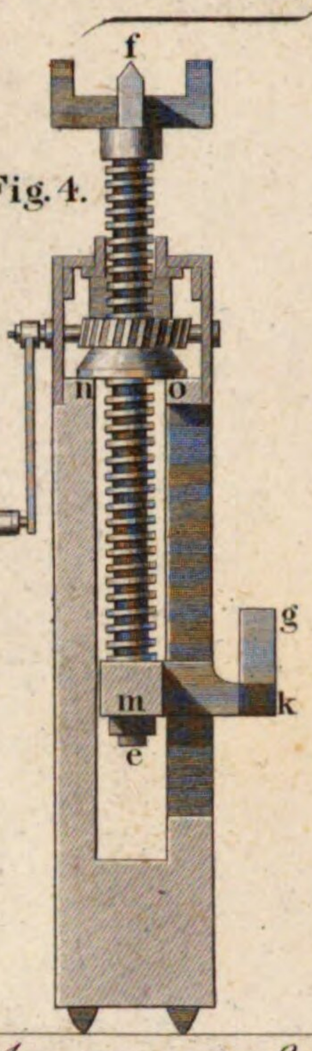

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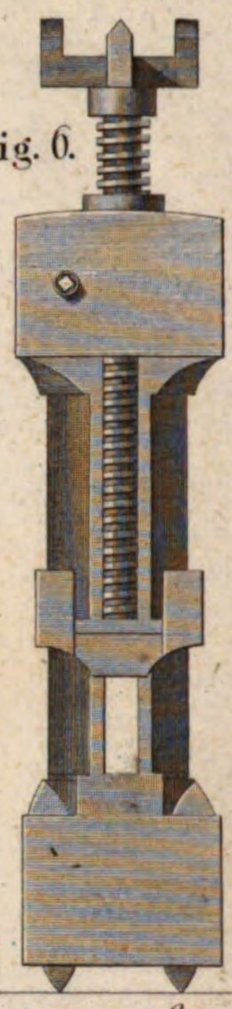

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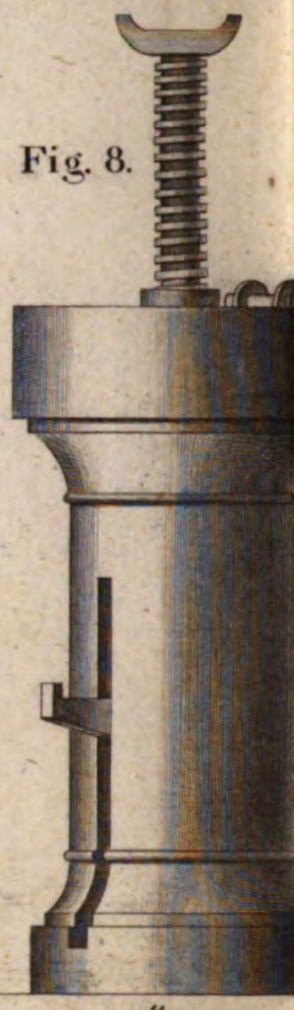

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Maafsstab für Fig. 1. bis 10.

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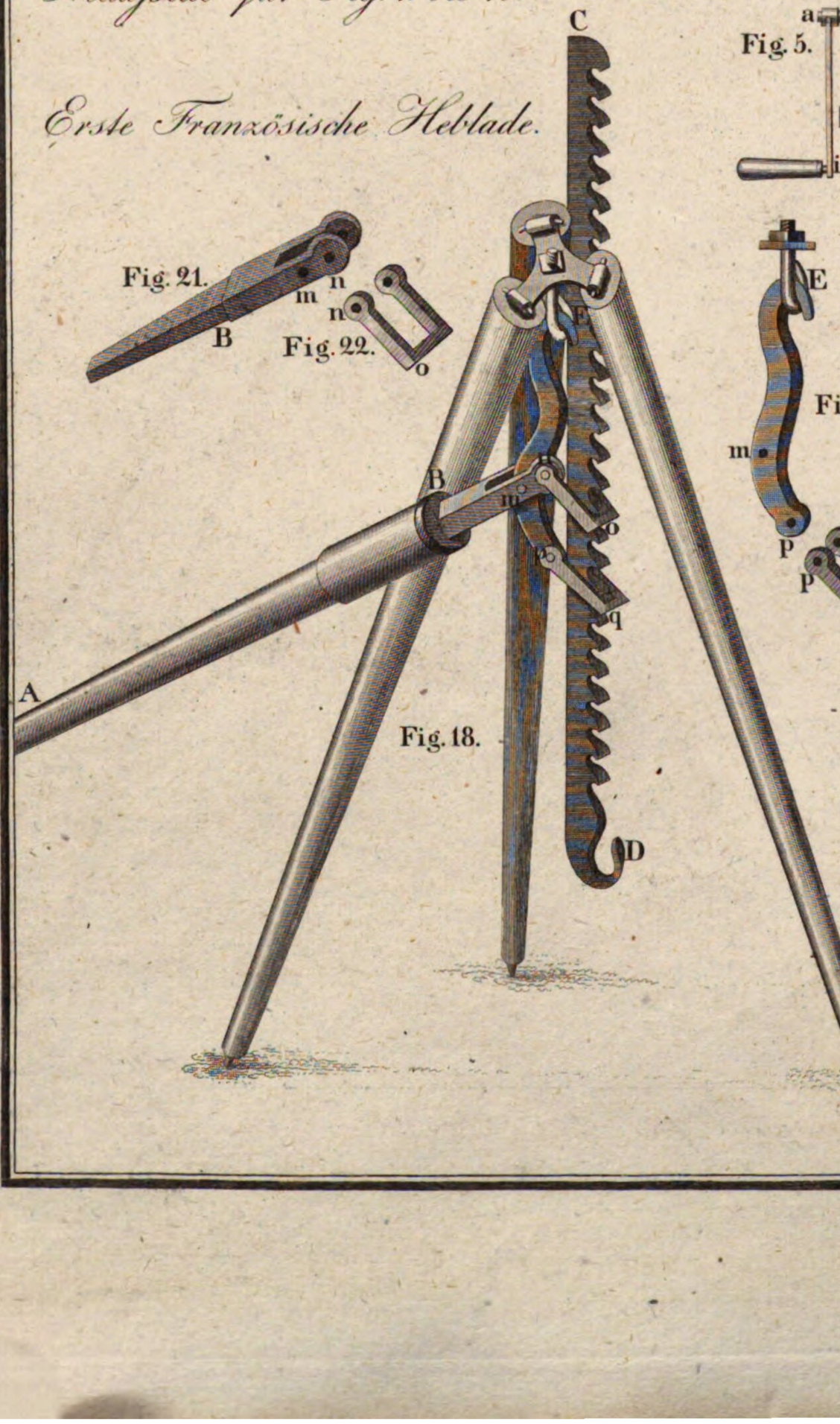


Fig. 5.

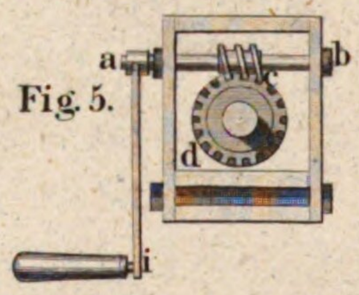


Fig. 7.

Fig. 21.

Fig. 22.

Fig. 10.

Fig. 20.

Zweite Französische

Fig. 15.

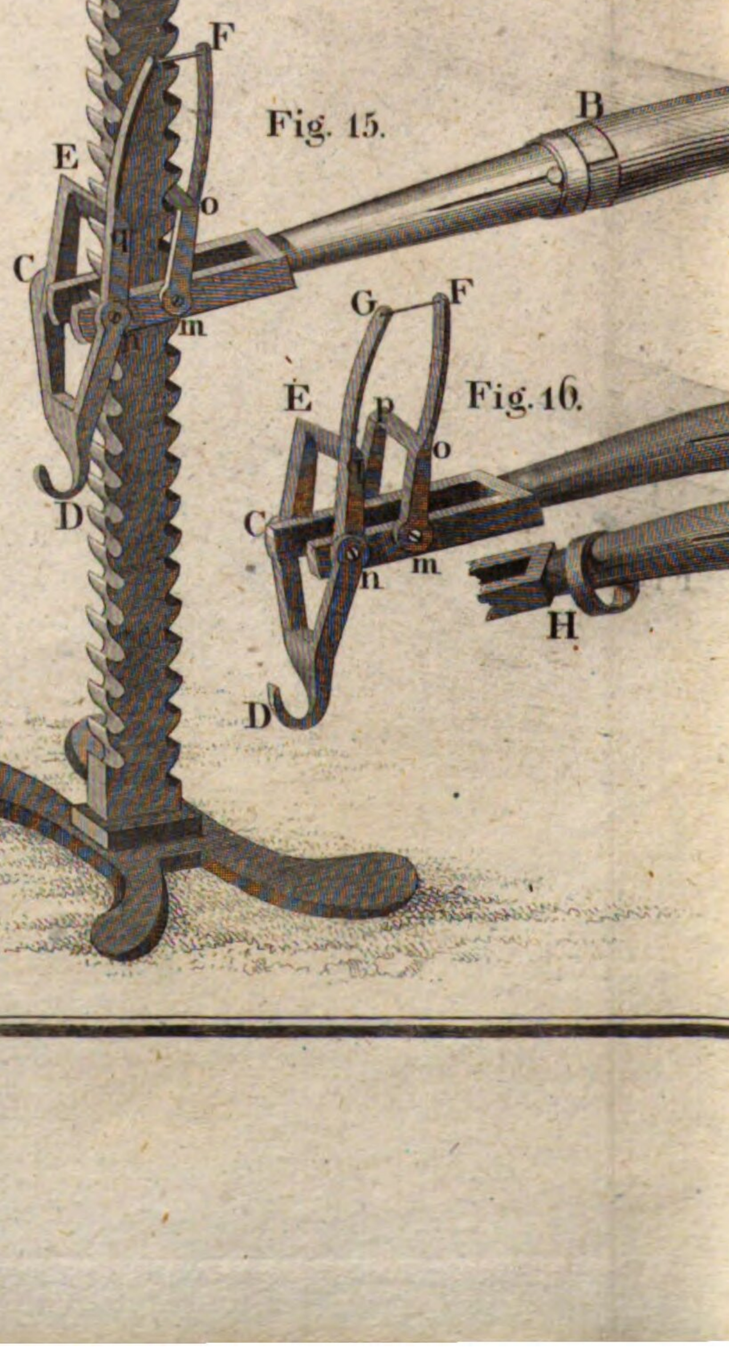
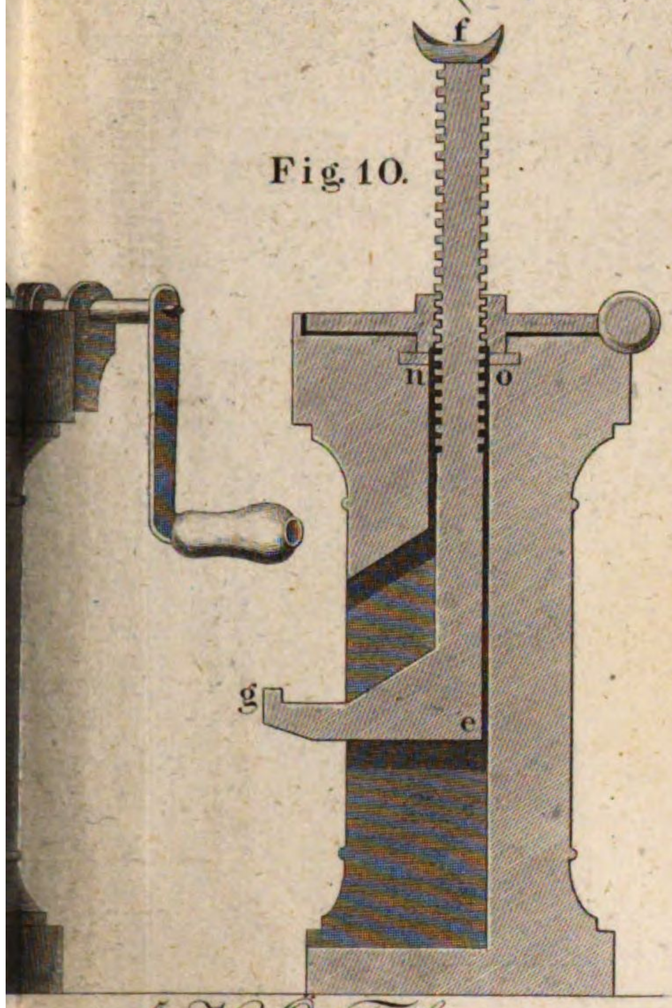


Fig. 16.

Fig. 18.

Englische Winde.

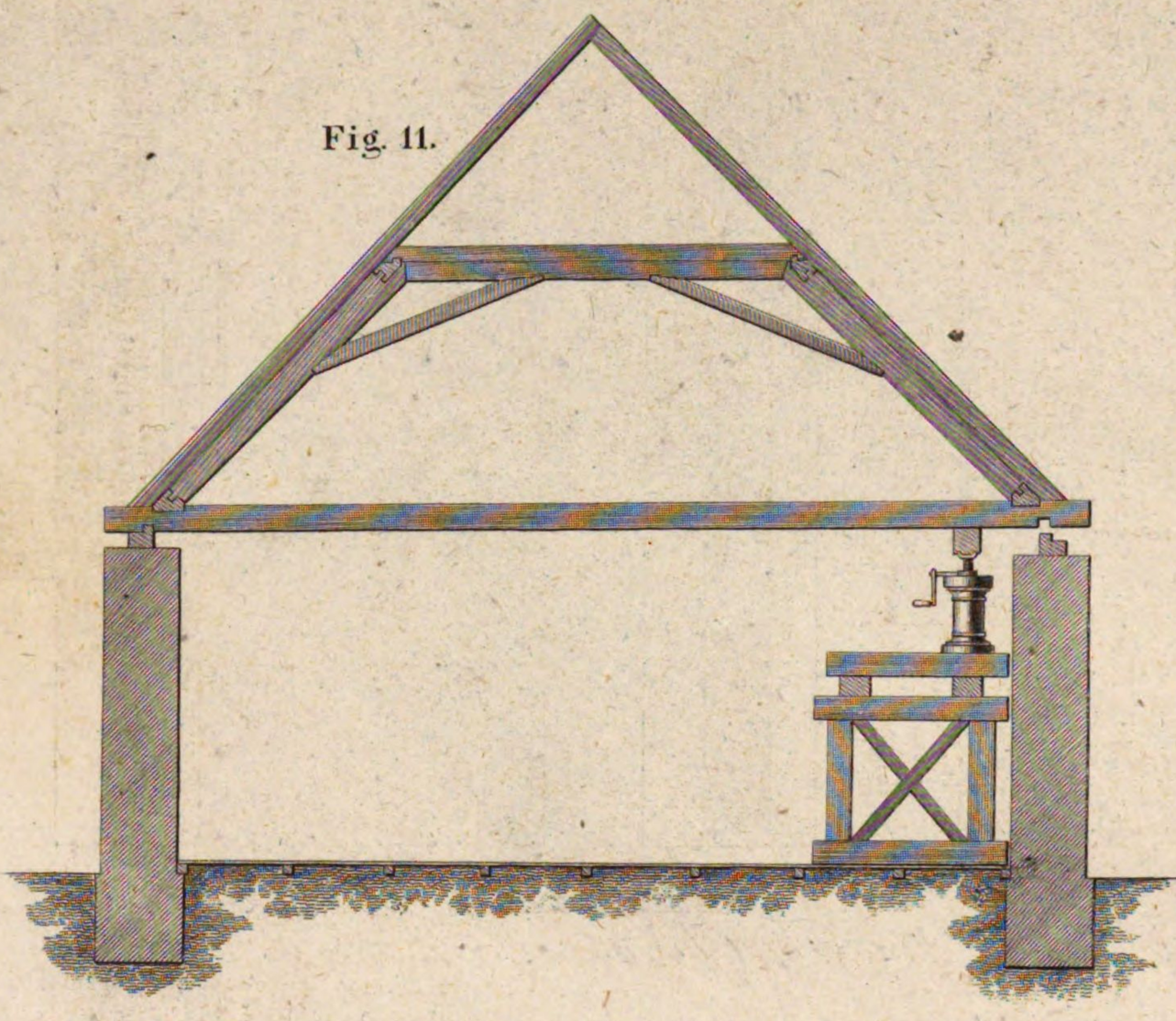
Fig. 10.



3 N. Ö. Fufs.

Gebrauch der englischen Winde bei dem Aufschrauben eines Dachstuhles.

Fig. 11.



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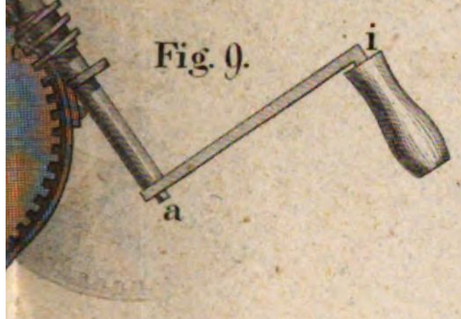
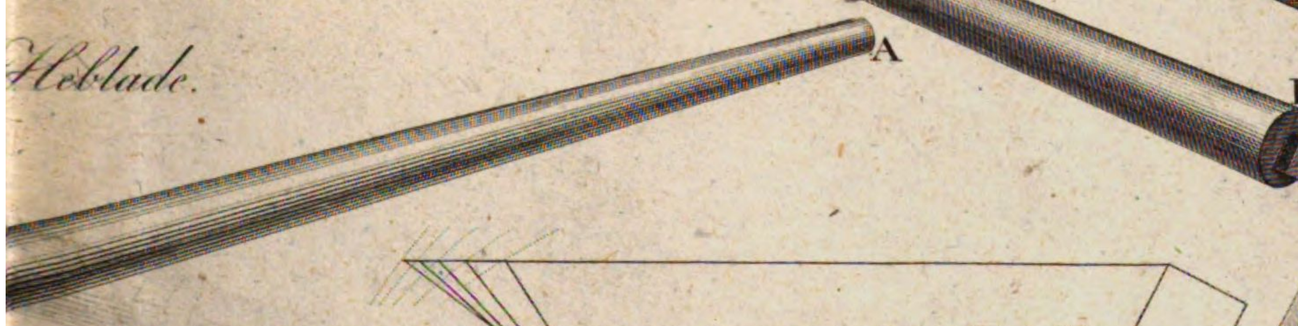


Deutsche Heblade.



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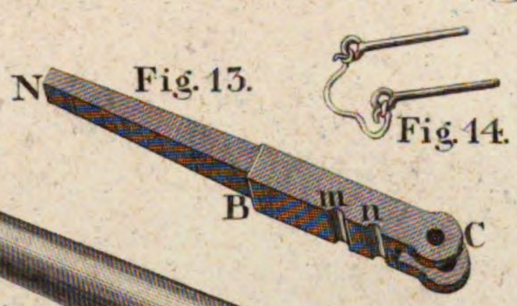
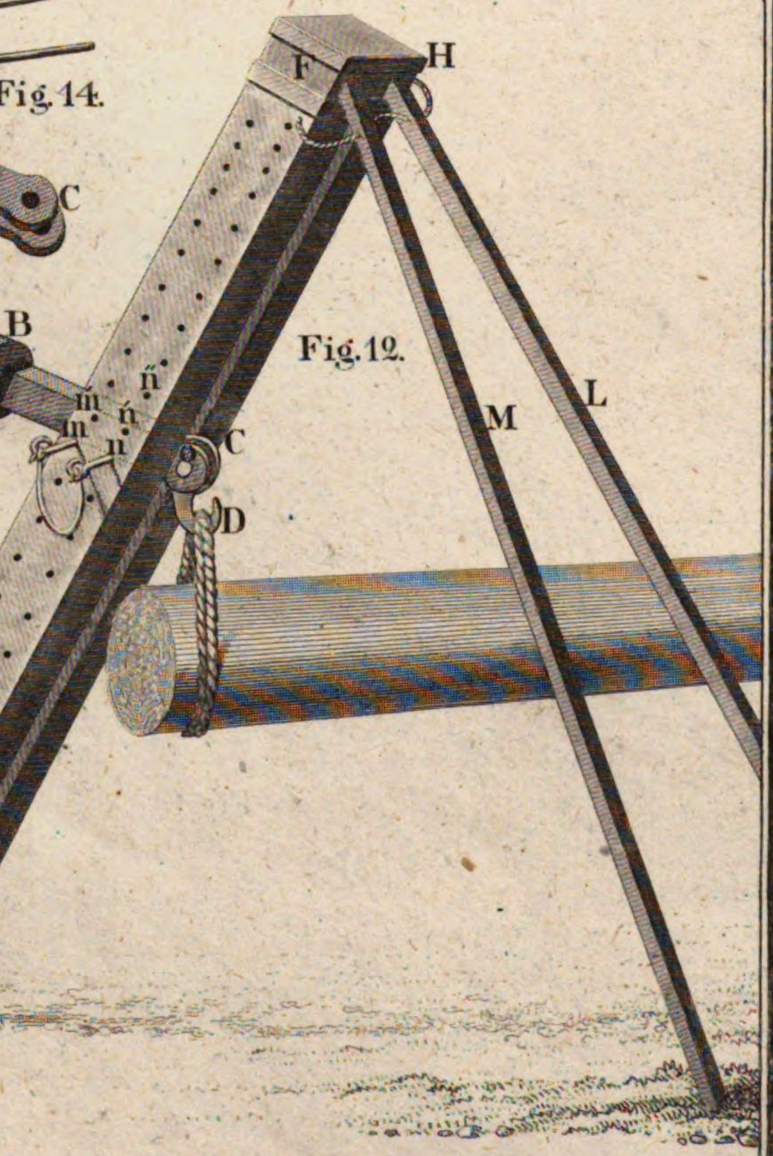


Fig. 14.

Fig. 12.



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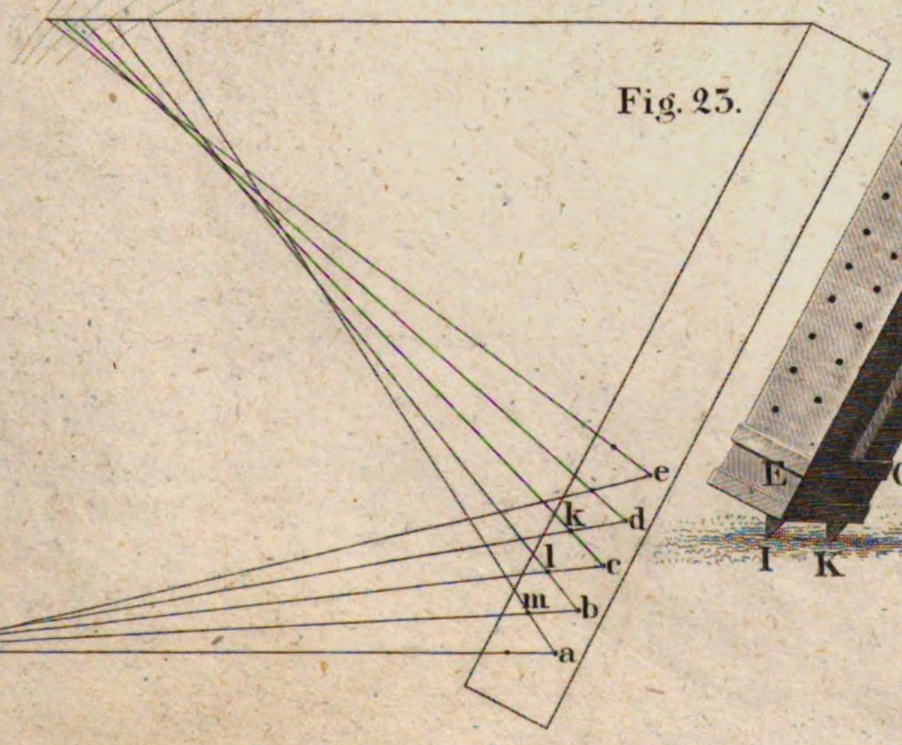

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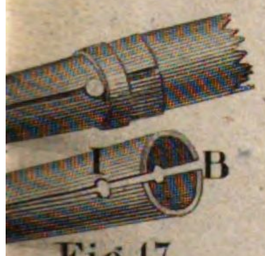


1 2 3 4 5 6 N. Ö. Fufs.

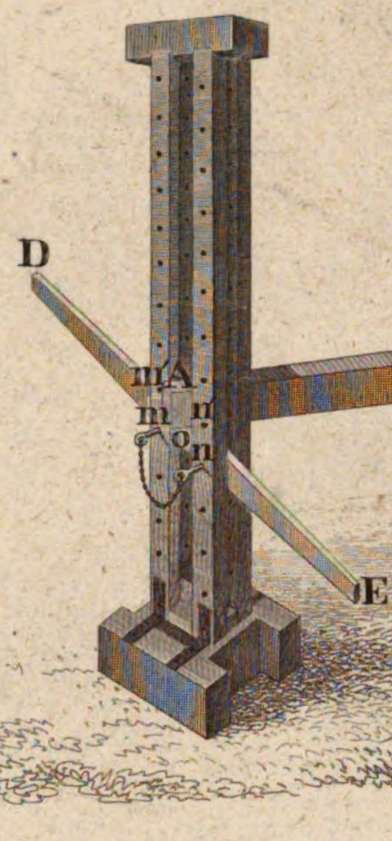
Maafsstab für Fig. 12 bis 22.

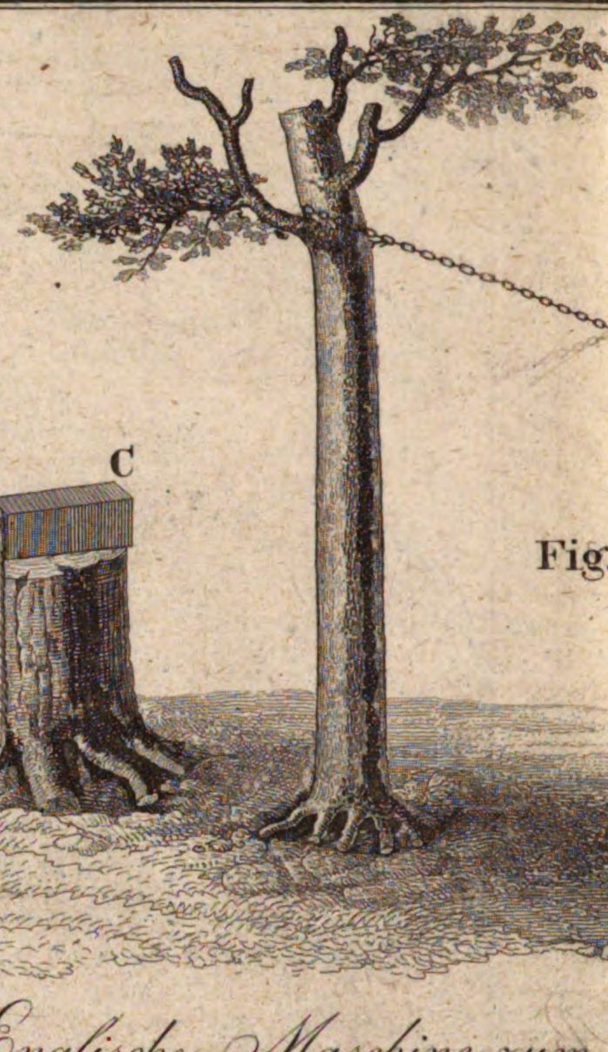
Jos. Skala sc. Praga.

AUSZIEHEN DER BA

Schwedische Heblade.

Fig. 1.

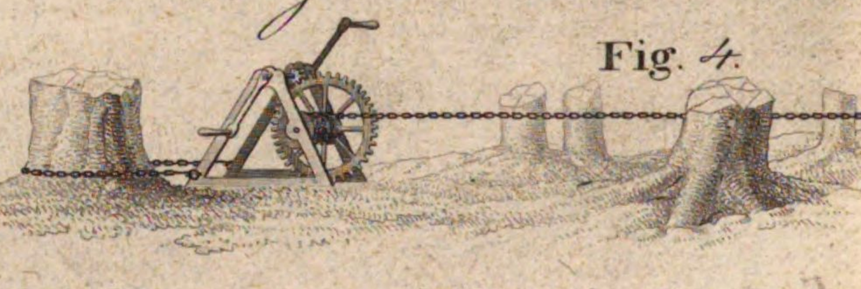




Fig

Englische Maschine zum

Fig. 4.



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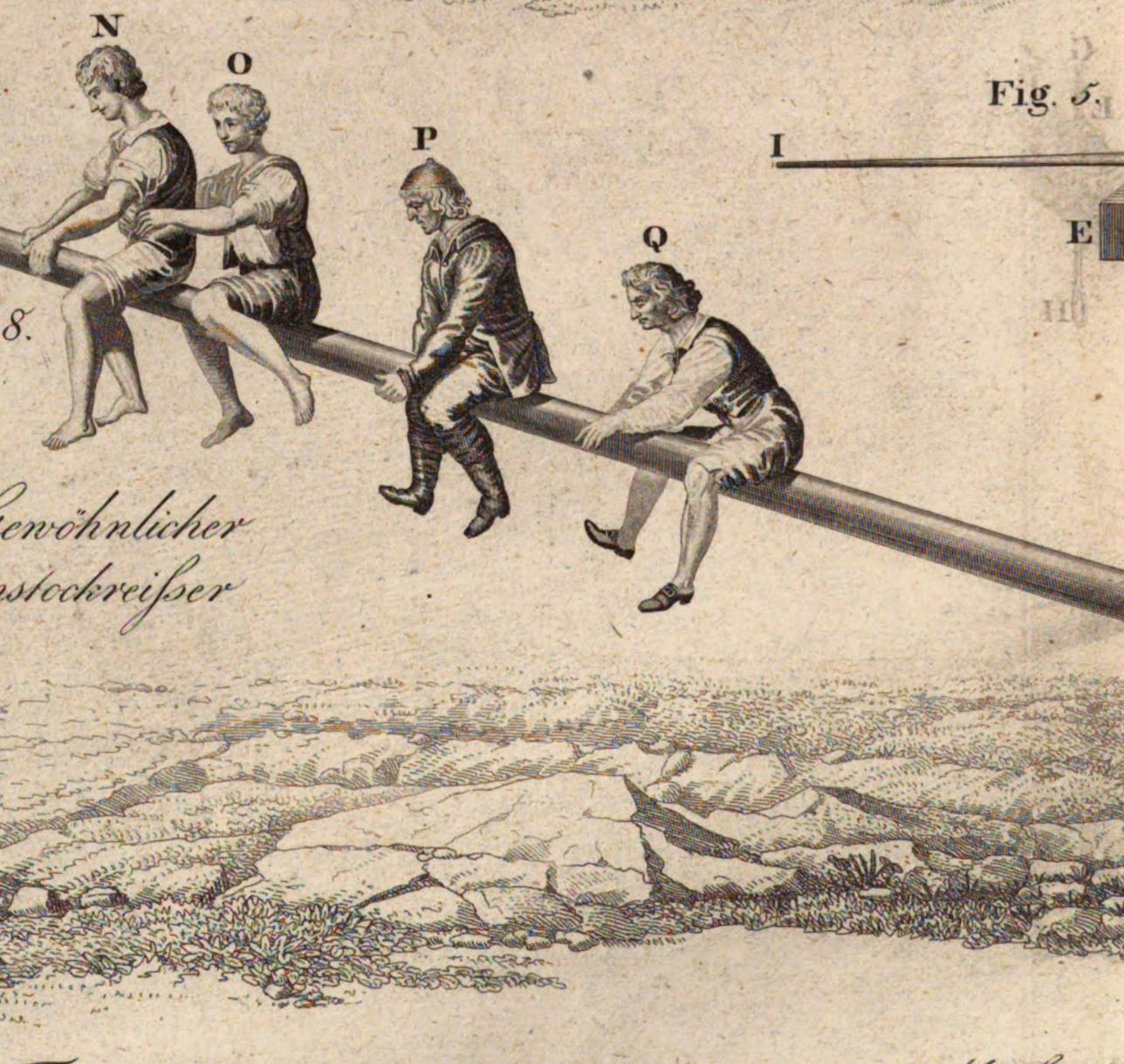
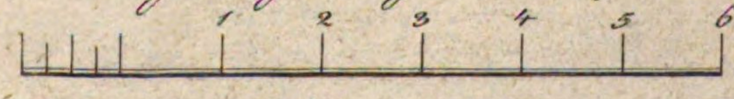


Fig. 5.

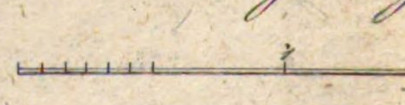
Gewöhnlicher Baumstockreißer

Maafstab für Fig. 1, 8 und 9.



N. Ö. Fuß.

Maafstab



Französische Hebläde, um Bäume sammt den Wurzeln auszureißen.

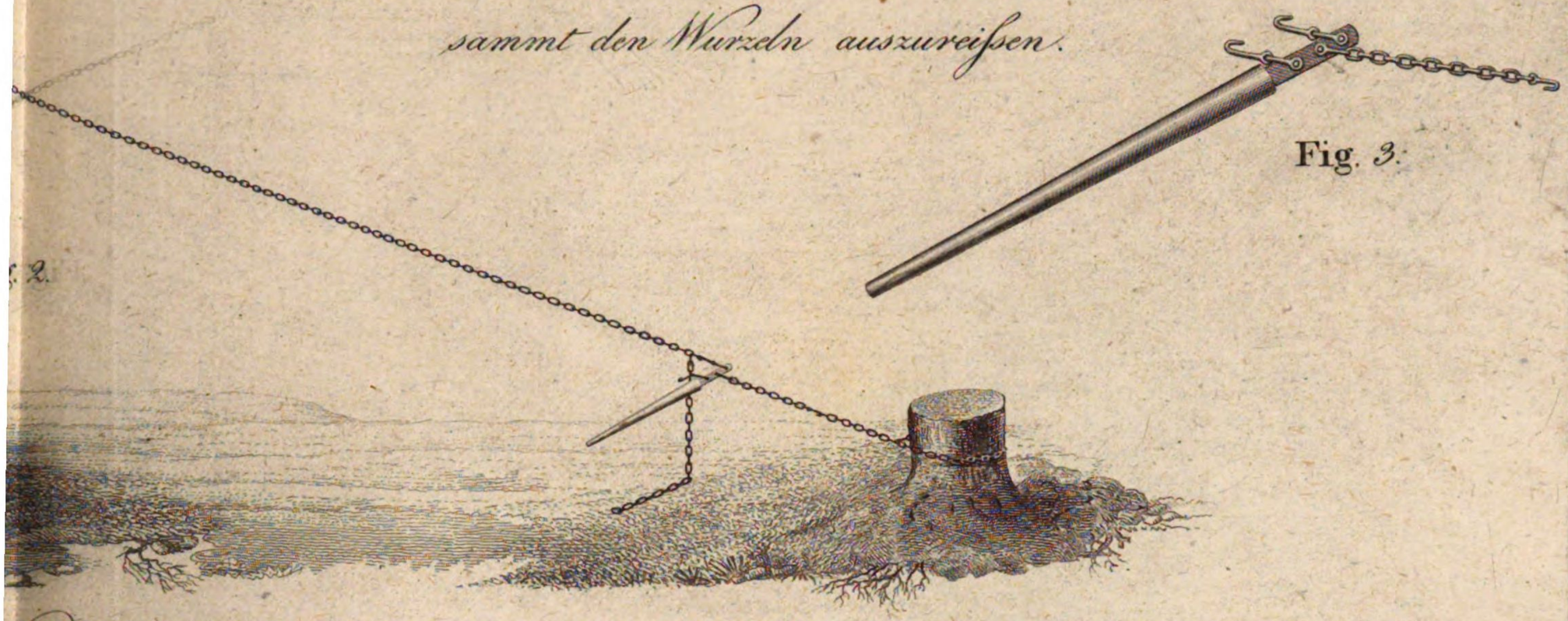


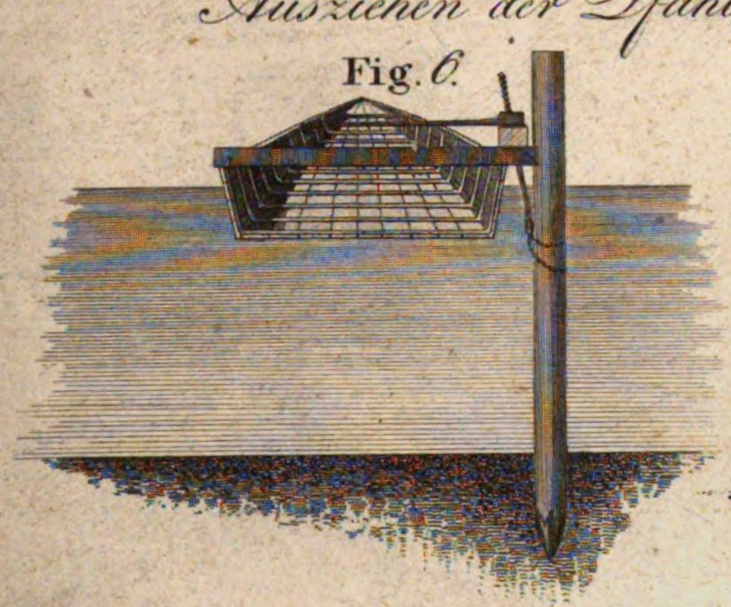
Fig. 2.

Fig. 3.

Baumstockreißen.

Ausziehen der Pfähle in Flüßen

Fig. 6.



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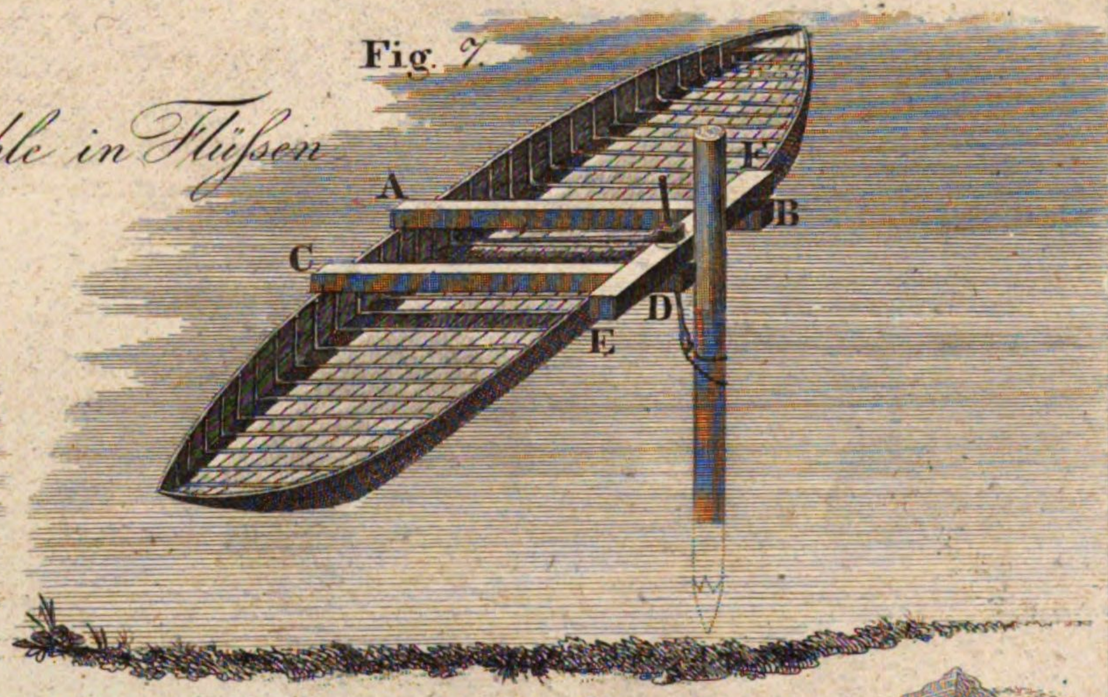


Steinbrechen

Fig. 9.

Maaßstab für Fig. 6 und 7.

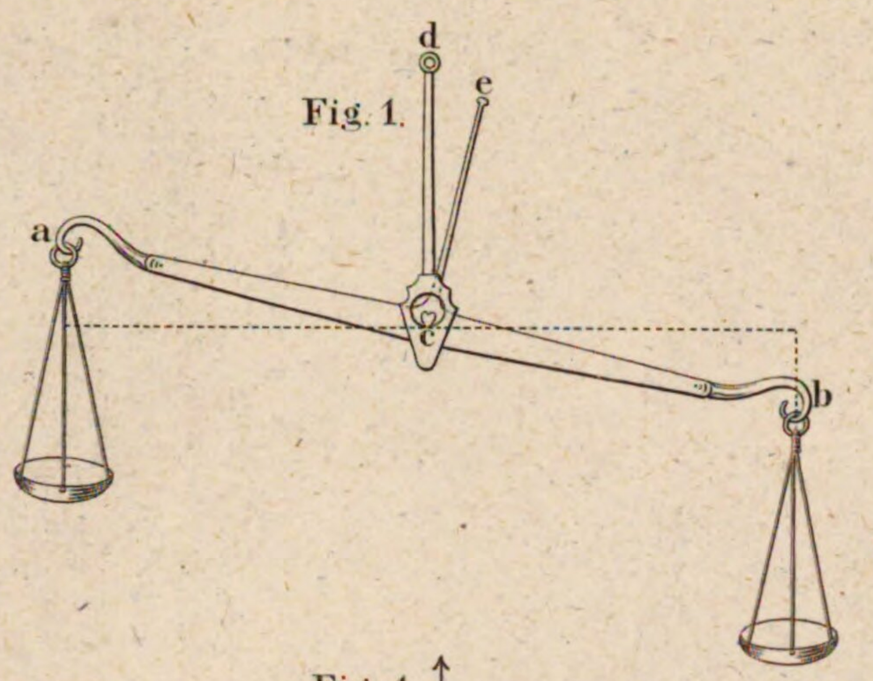
3 4 5 *N. Ö. Klafter.*

Maaßstab für Fig. 2 und 4.

3 6 9 12 *N. Ö. Fuß.*

Jos. Skala sc. Praga.

Fig. 1.



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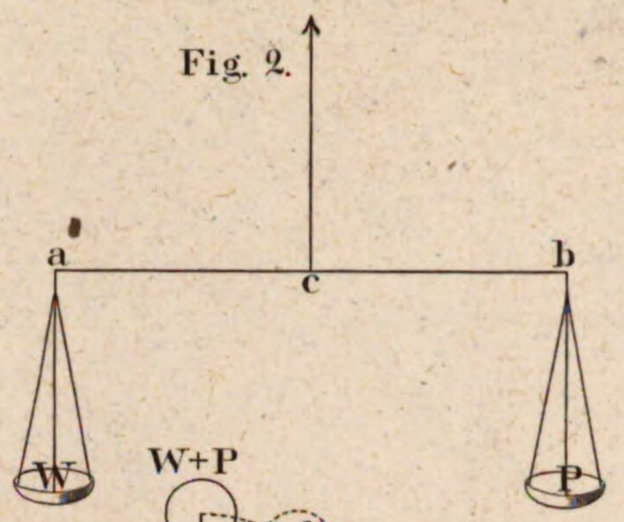

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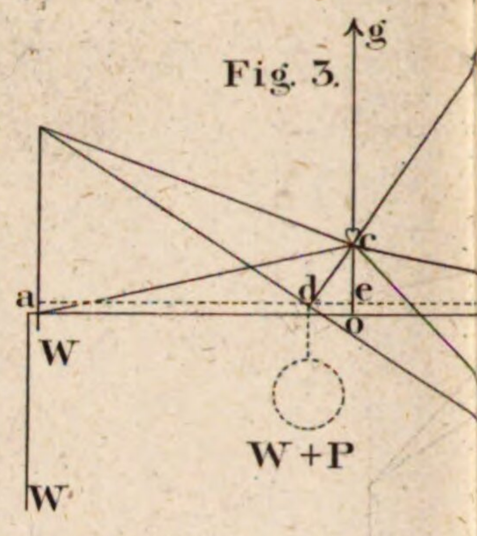

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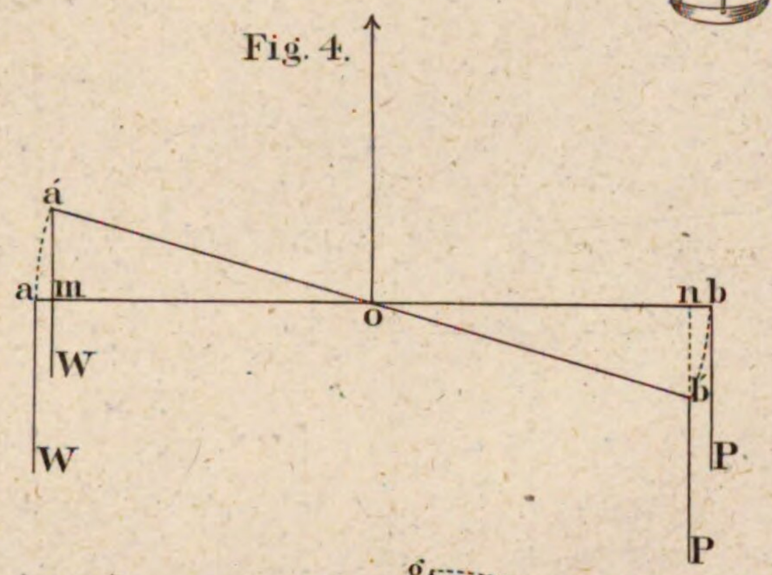
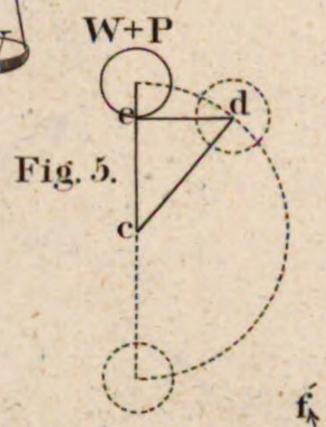


Fig. 5.



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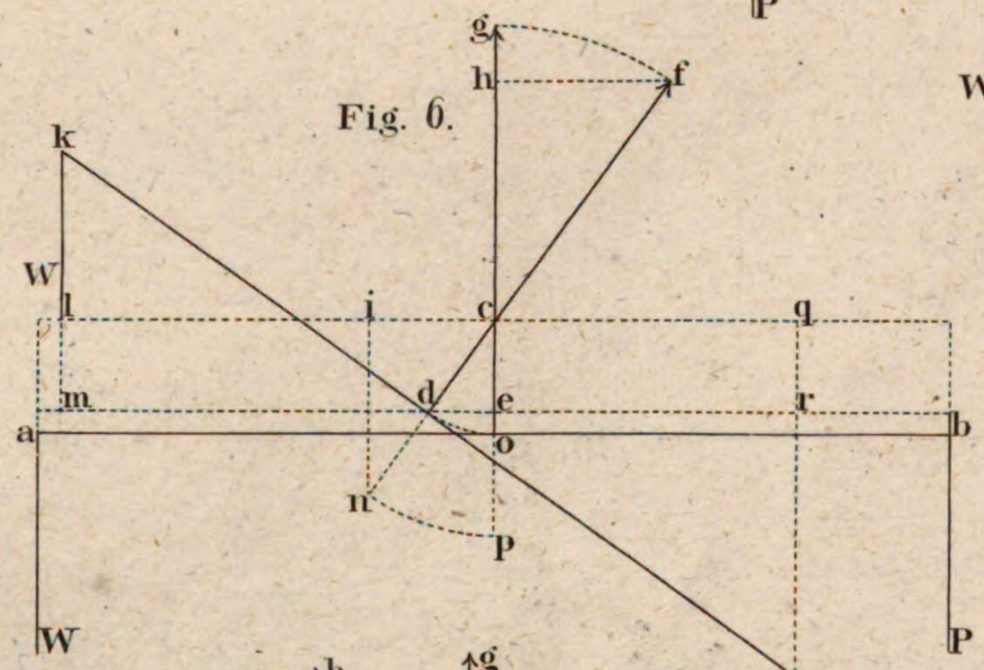

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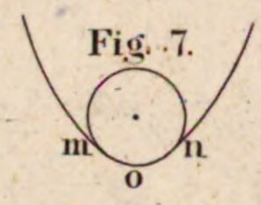

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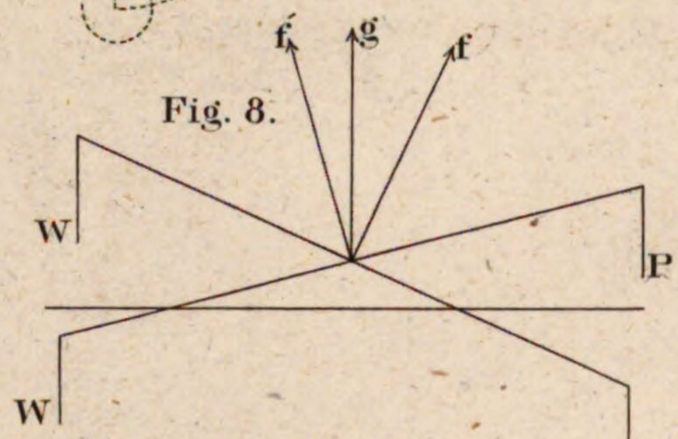

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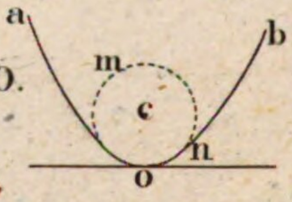
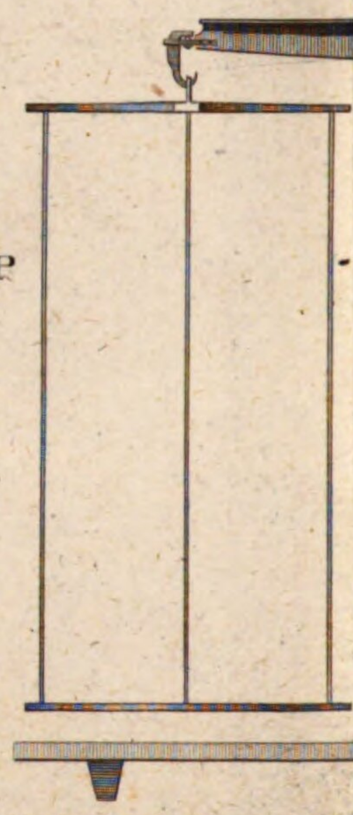
Fig. 10.





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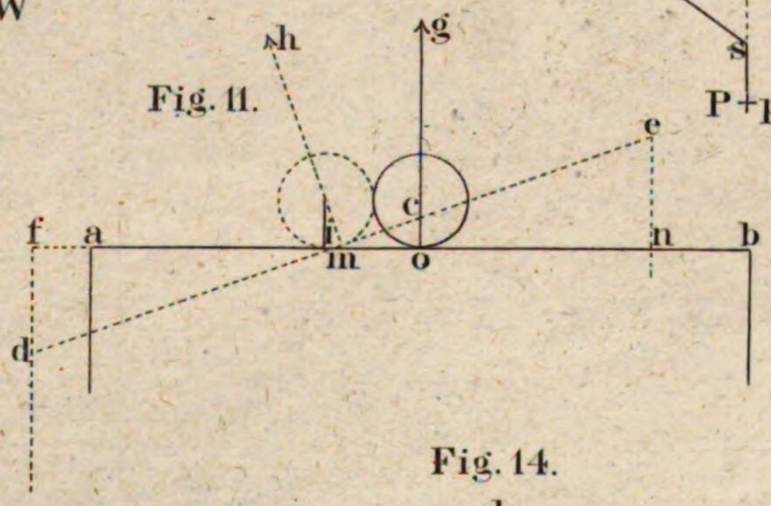

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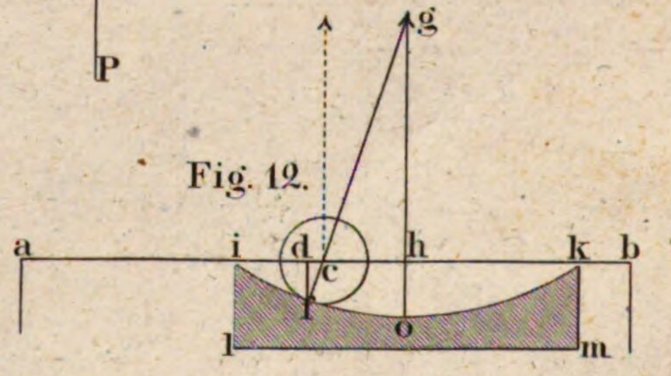


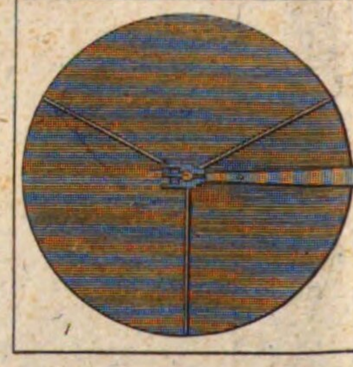
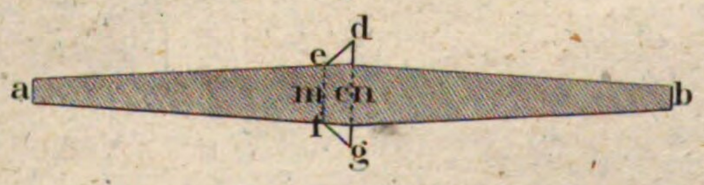


Fig. 20.

Fig. 14.



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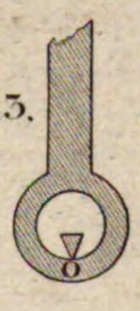

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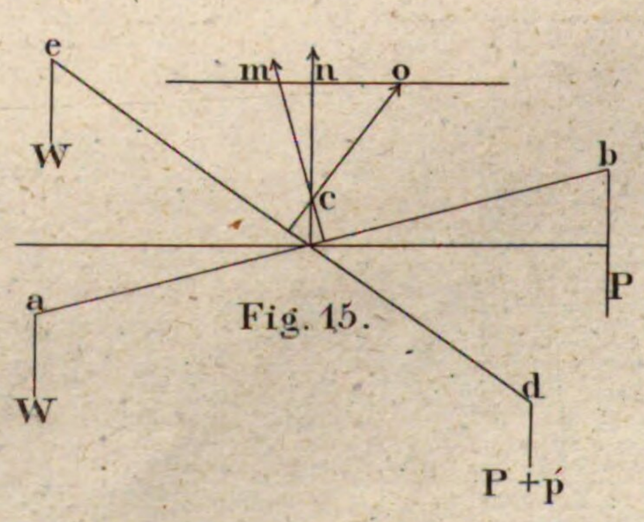
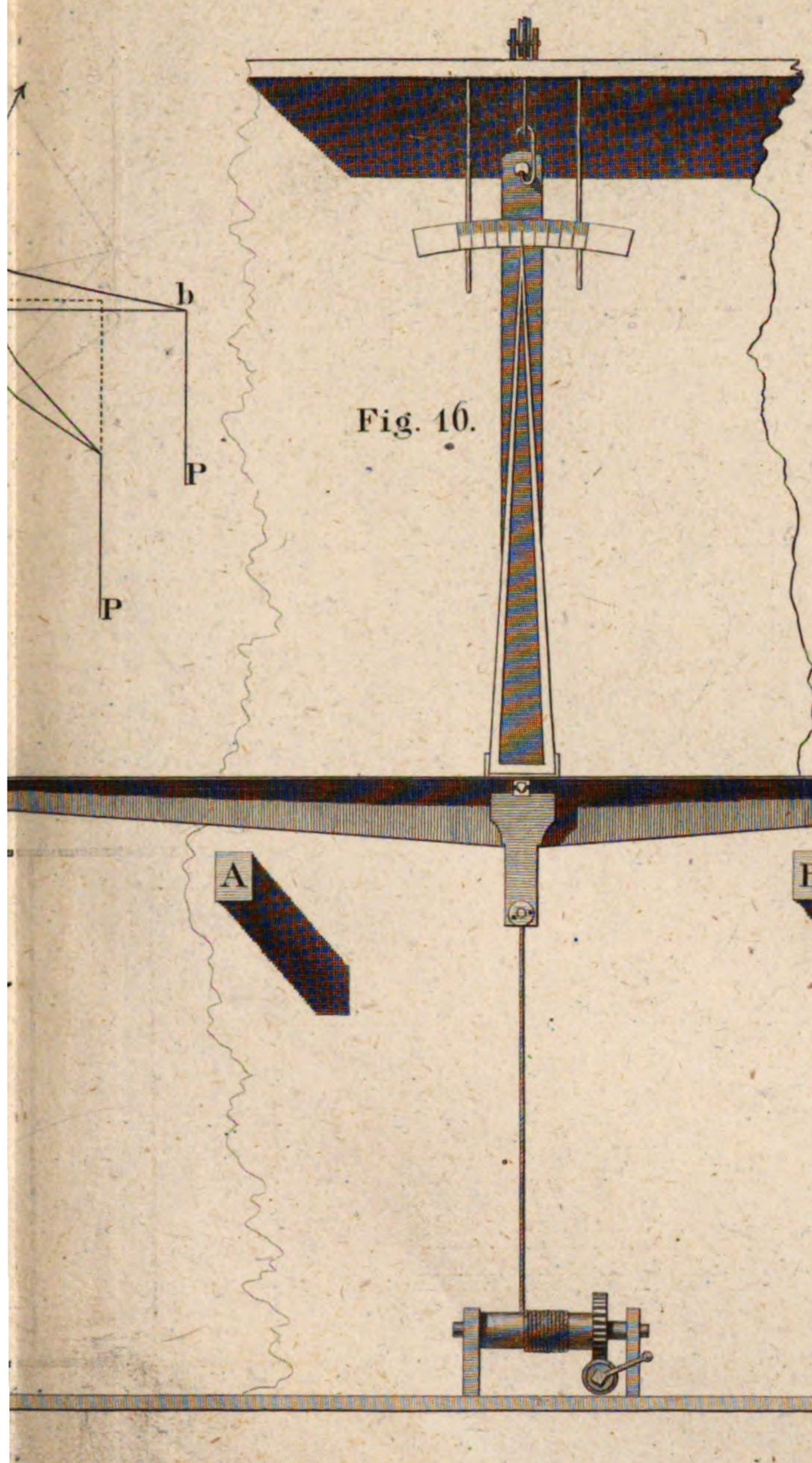


Fig. 19.

Fig. 16.



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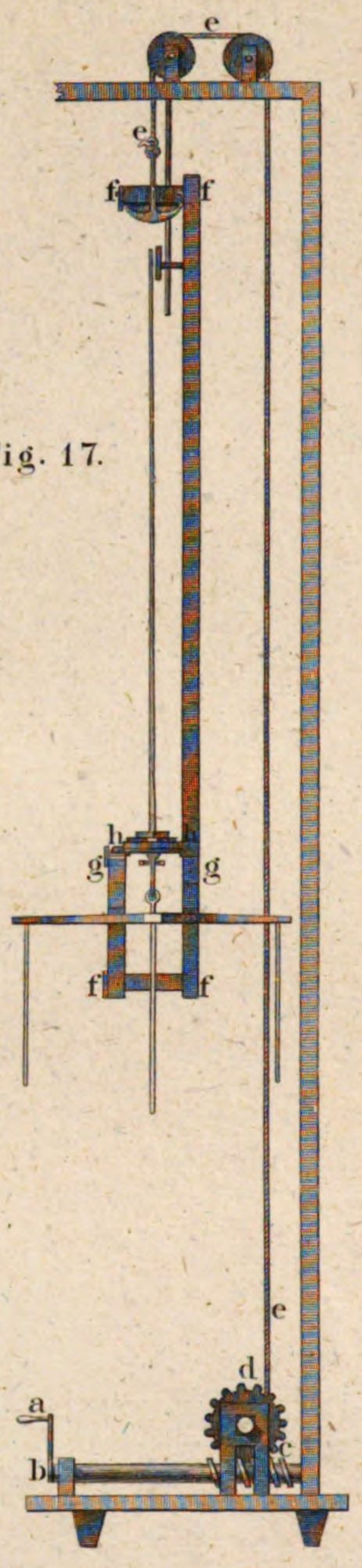

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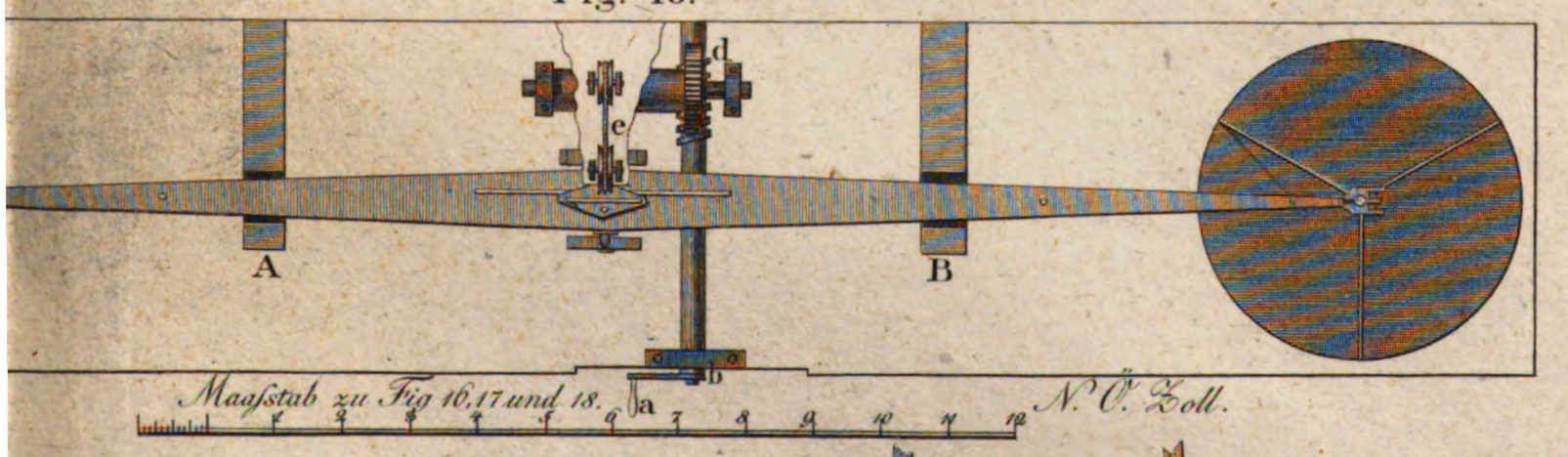

Maafsstab zu Fig 16, 17 und 18. *N. Ö. Zoll.*

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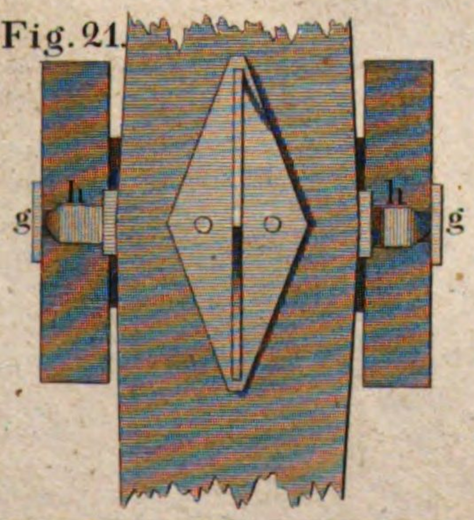

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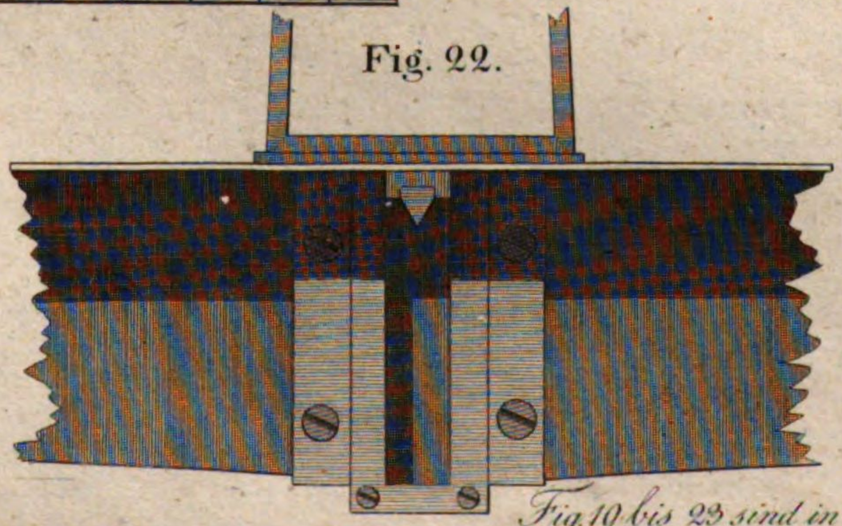

Fig. 23.

Fig. 19 bis 23 sind in natürlicher Größe.

Jos. Skala sc. Praga.

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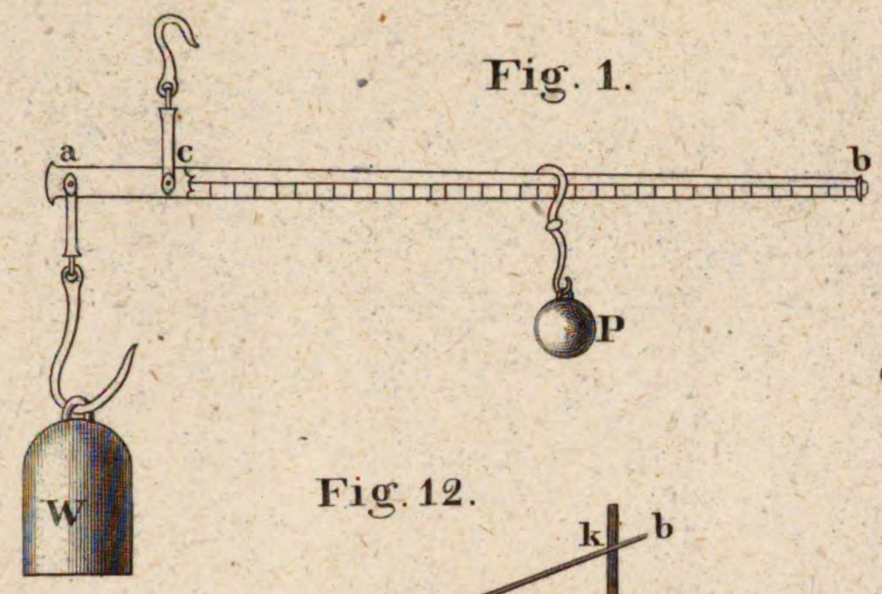

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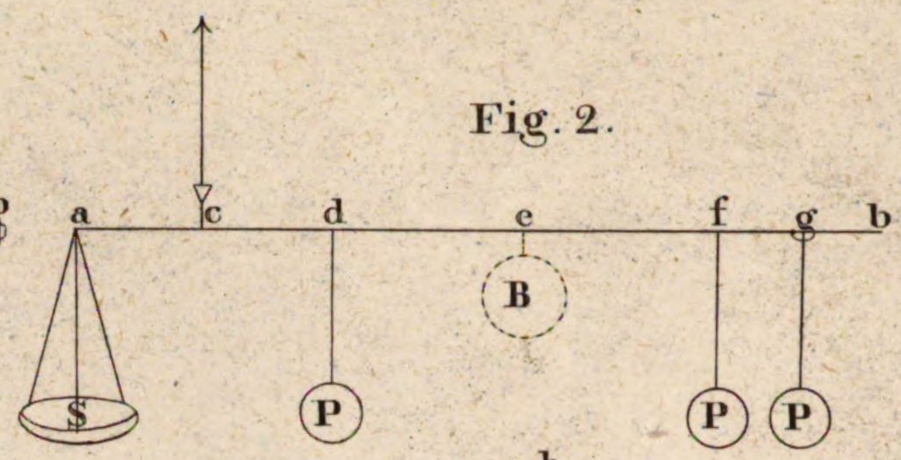

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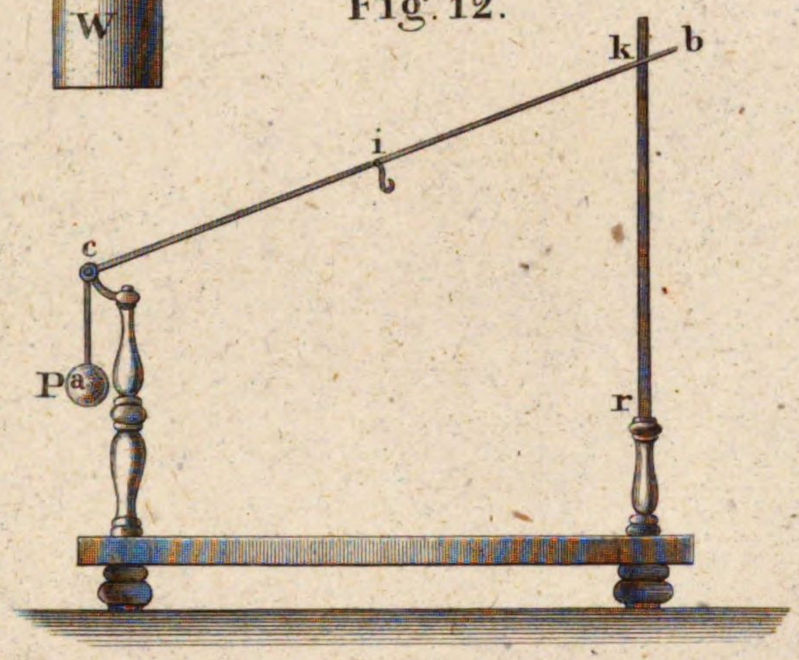

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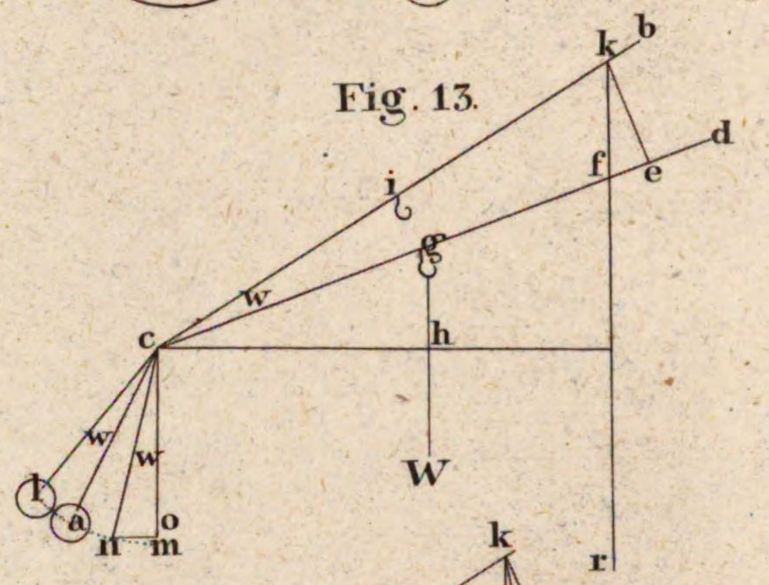

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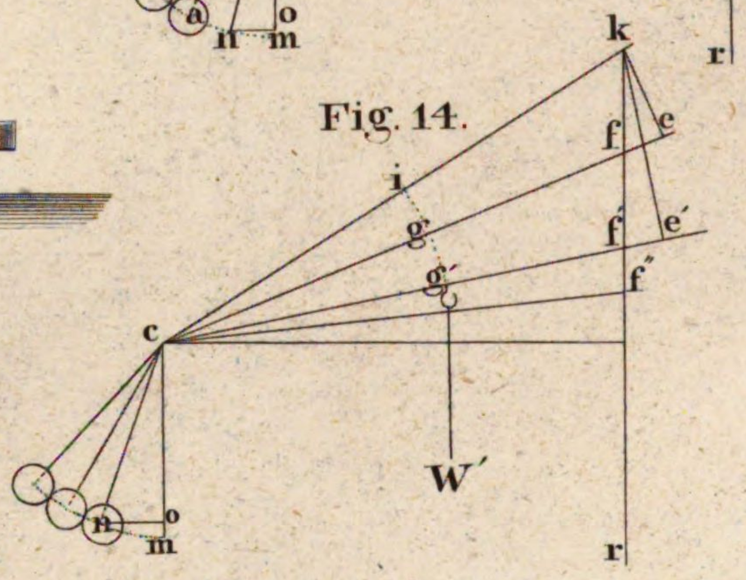

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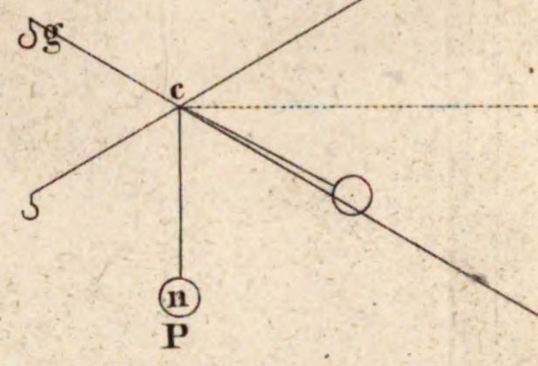

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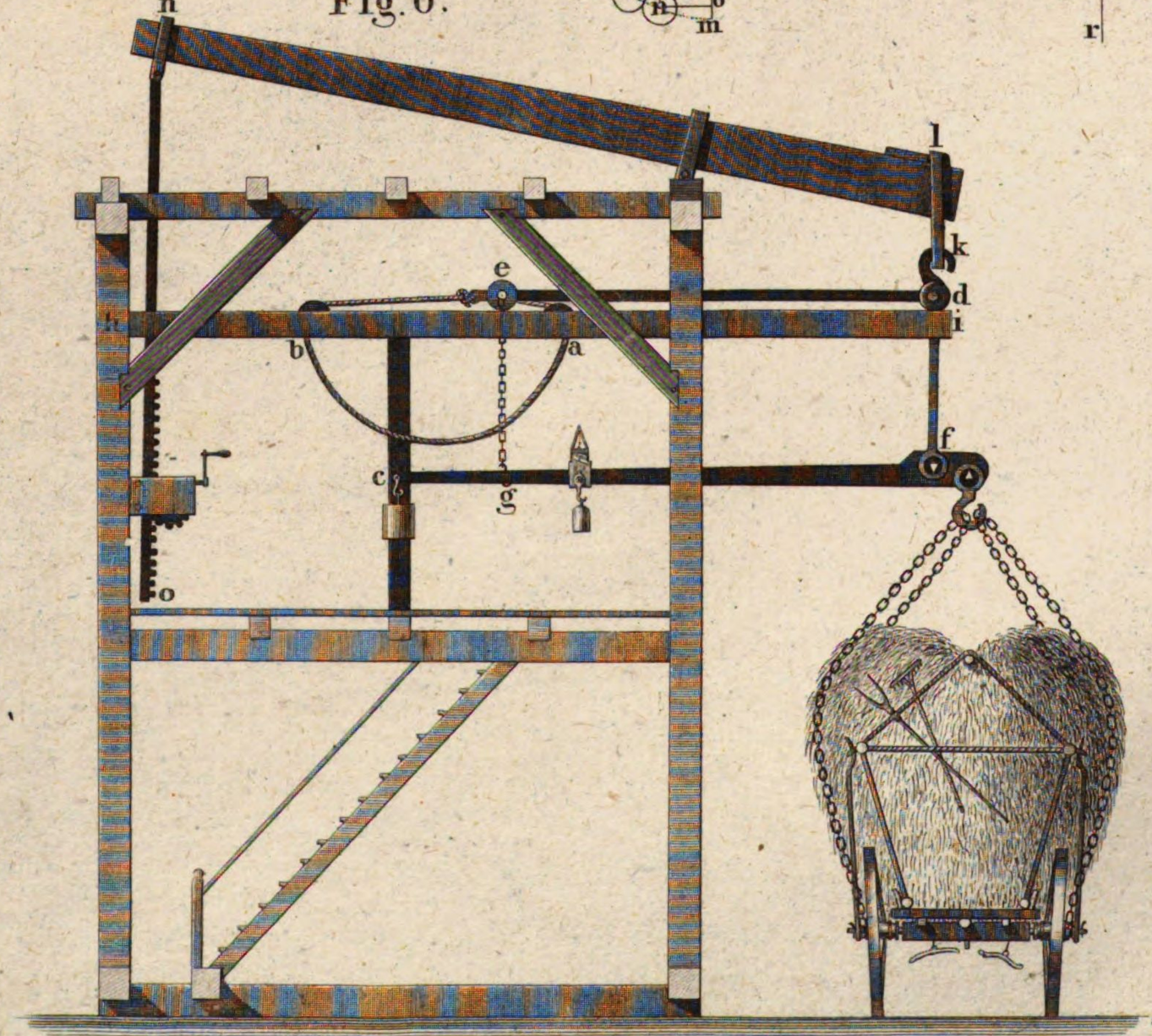

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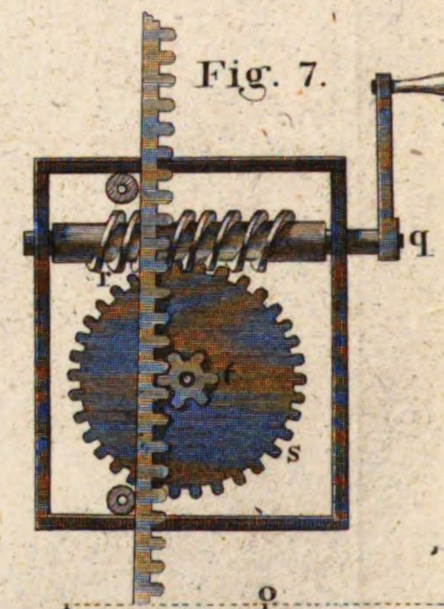


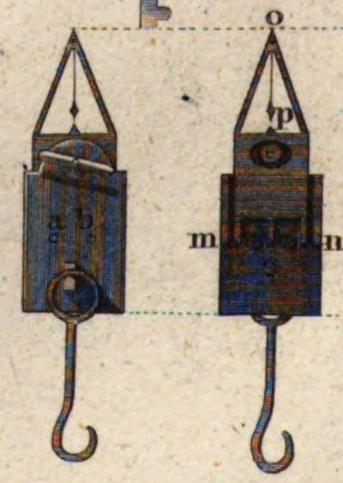
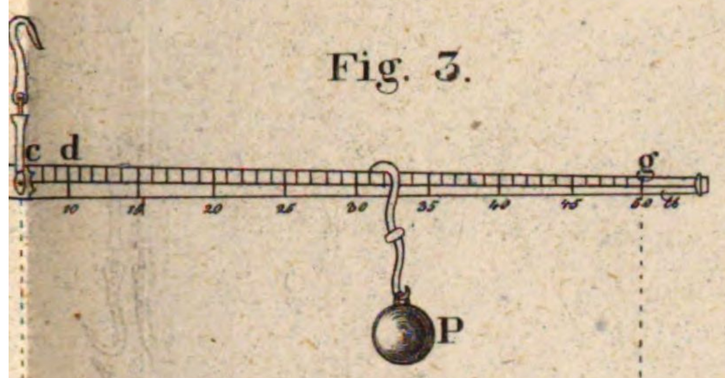


Fig. 8. Fig. 9.

D ZEIGERWAGE.

Nº 9.

Fig. 3.



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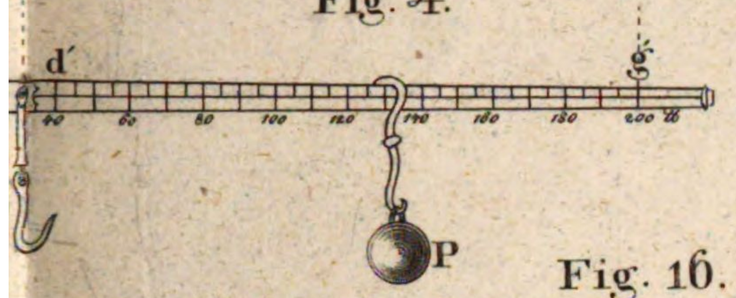

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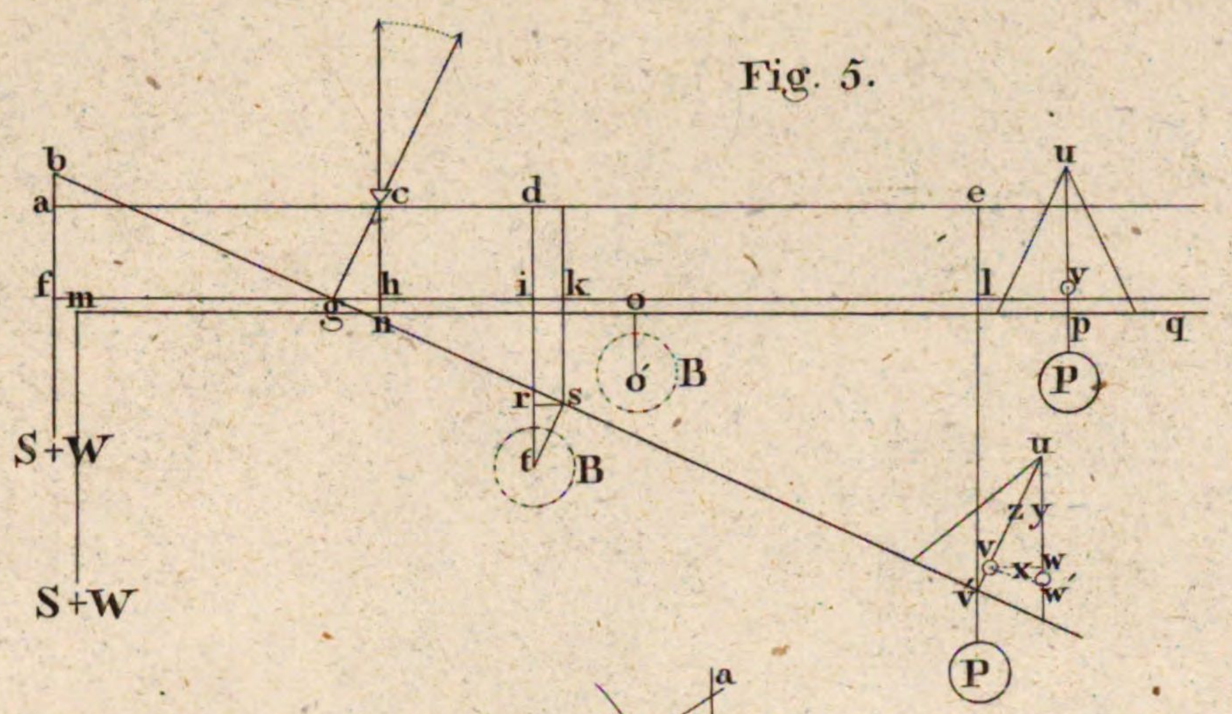

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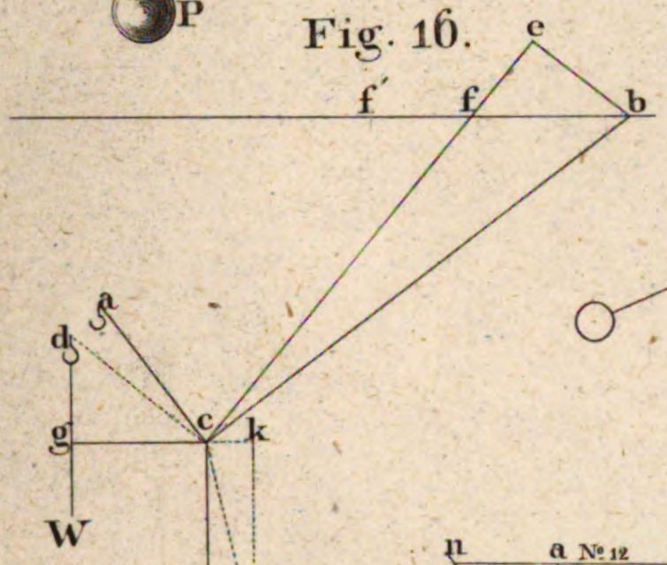


Fig. 18.

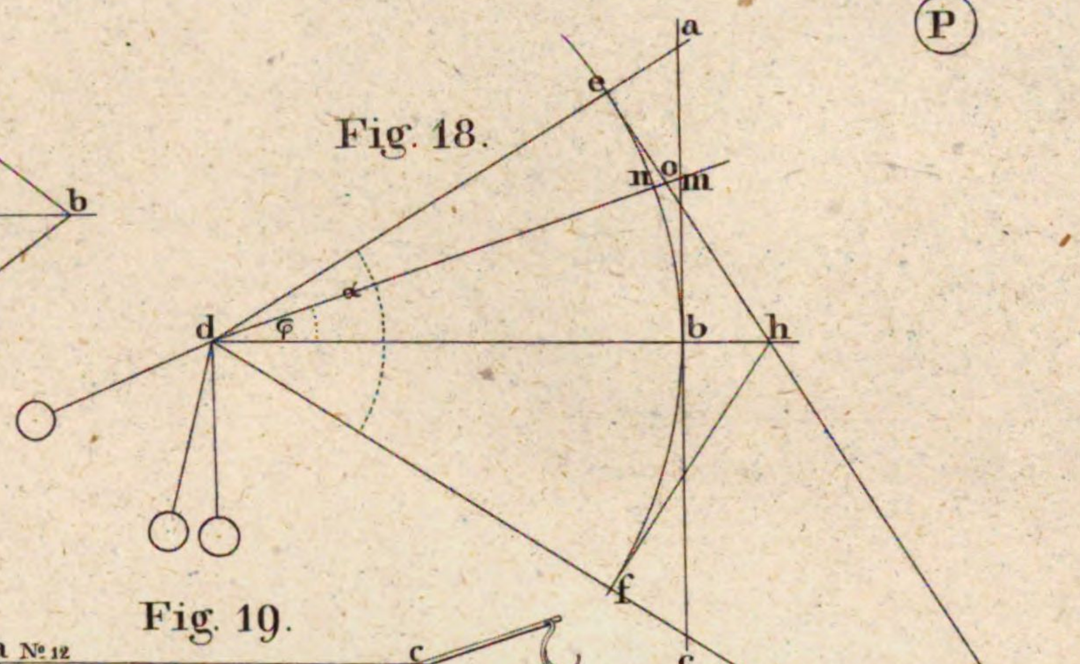


Fig. 19.

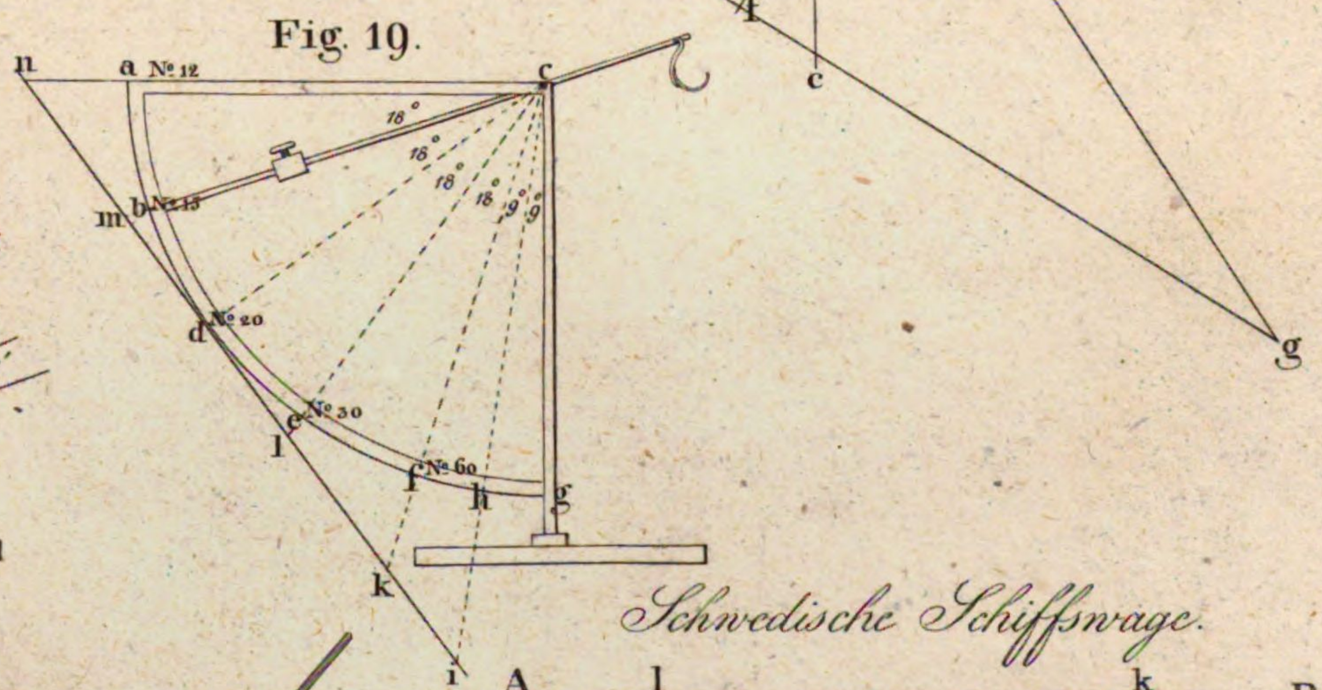


Fig. 17.

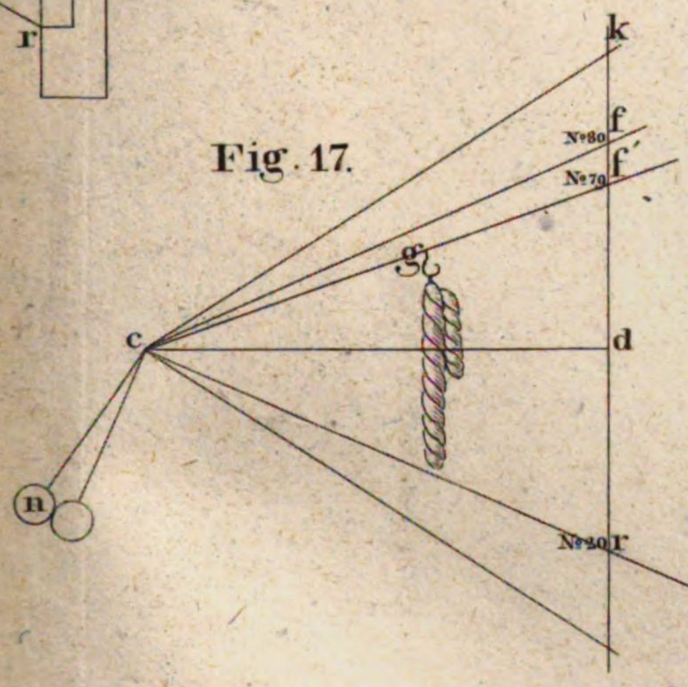


Fig. 10.

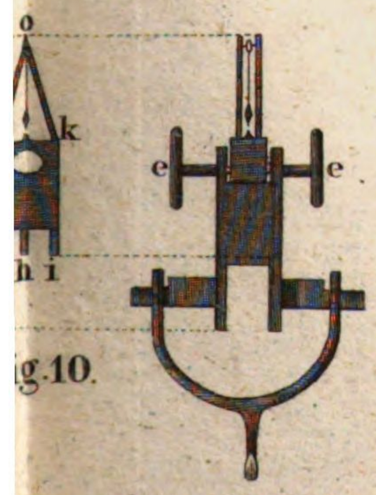
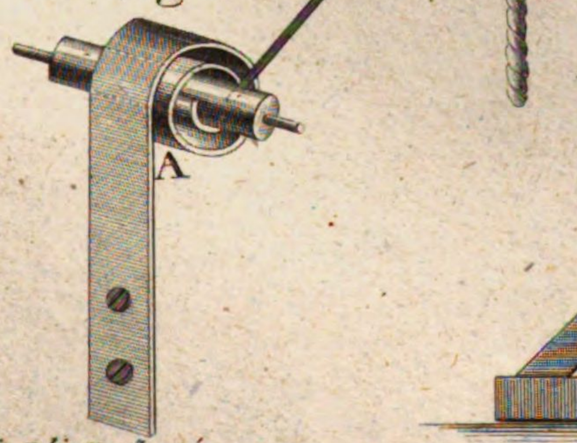


Fig. 11.

Fig. 20.



Schwedische Schiffswage.

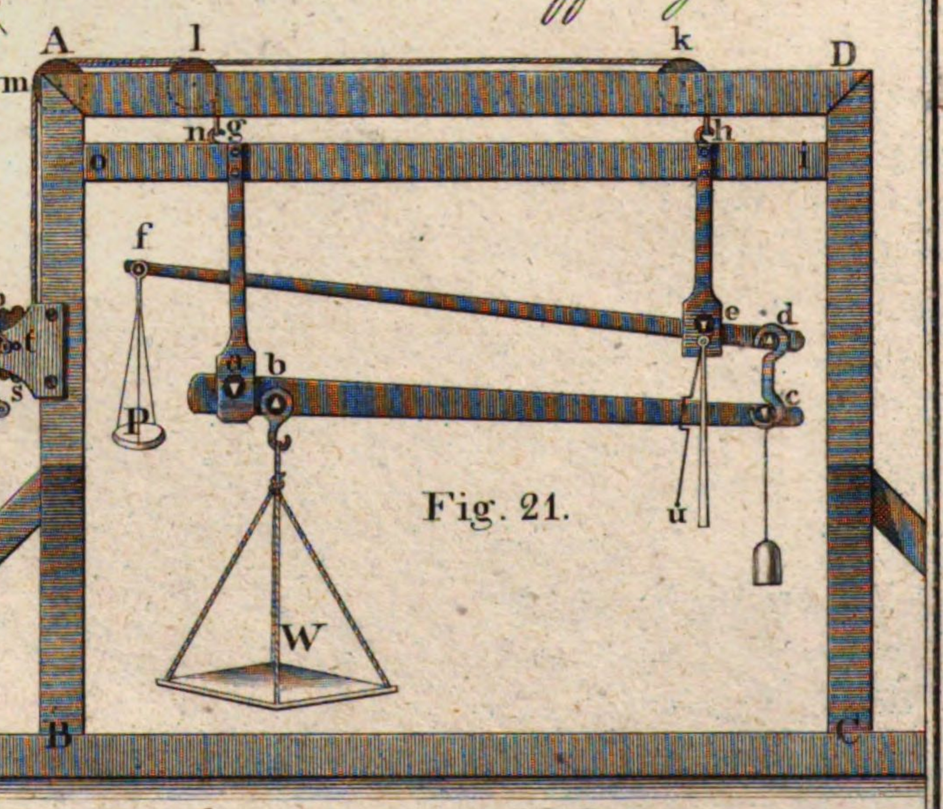


Fig. 21.

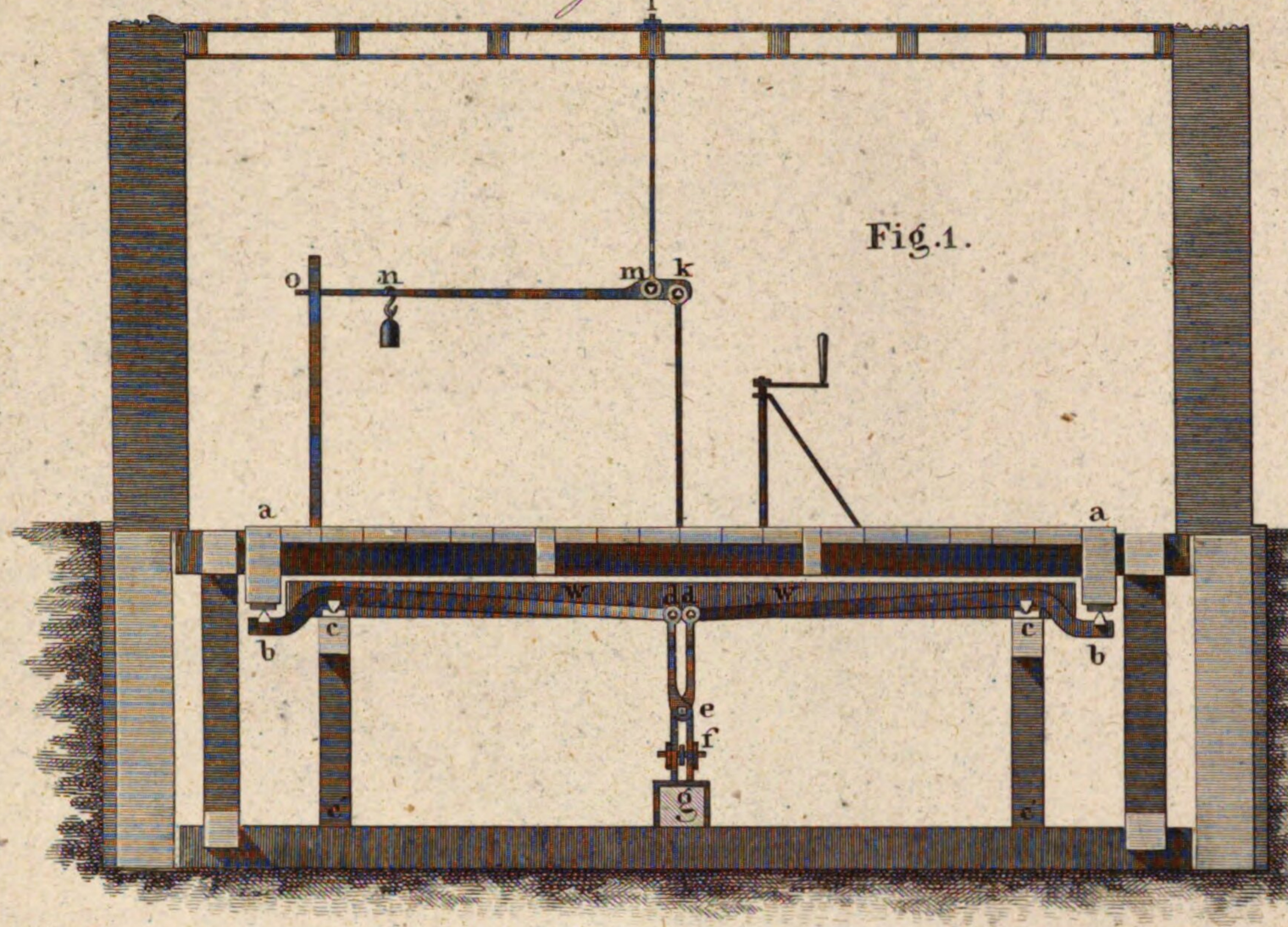
Maaßstab für Fig. 7 bis 11; 1" = 1'.

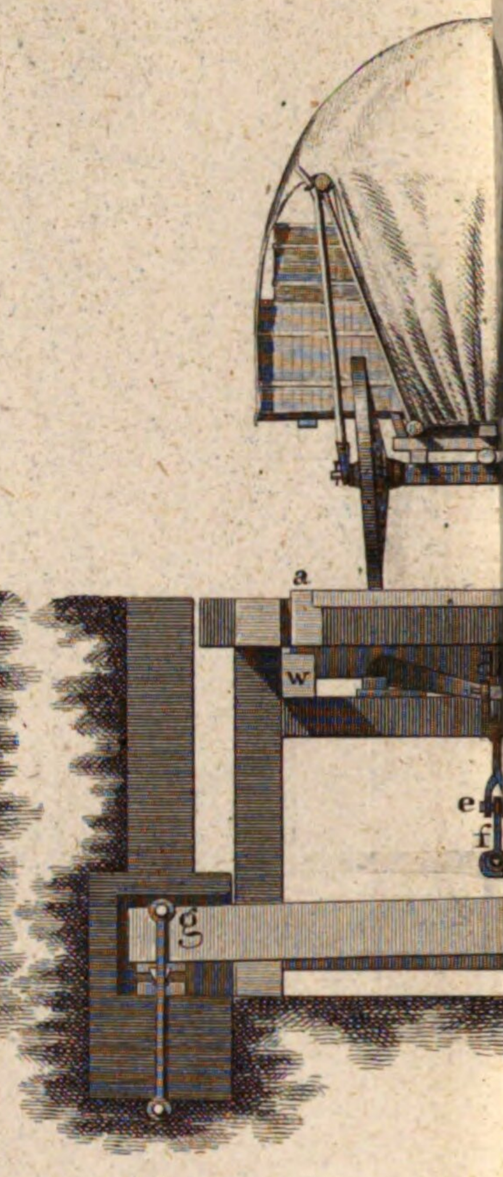
Maaßstab für Fig. 6; 1" = 1°.

Zelisko sc. Prage 1830

Längendurchschnitt.

Fig.1.





Grundriss.

H

Fig.2.

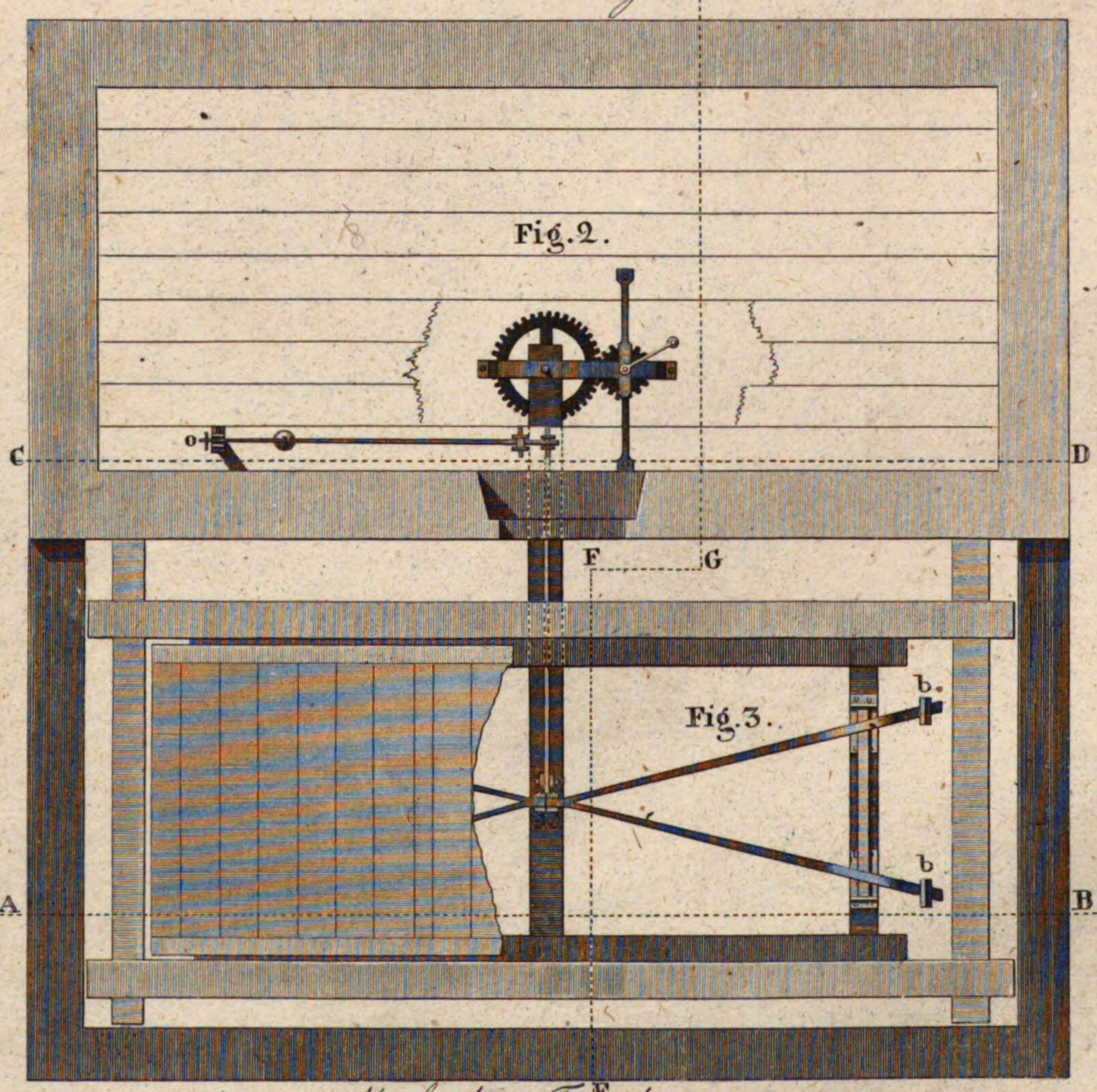
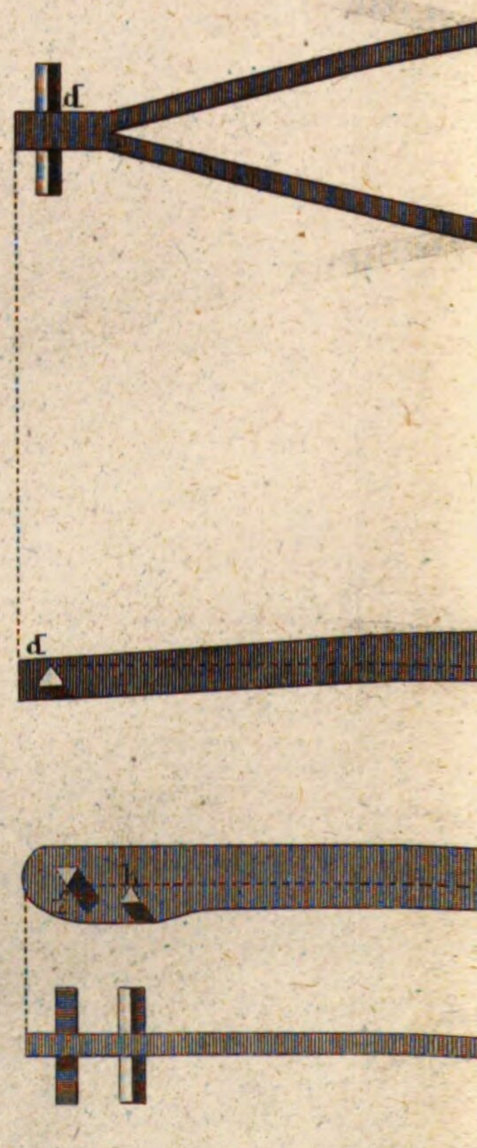


Fig.3.



Maafsstab zu Fig. 1 bis 4.

N. Ö. Fufs.

1 Zoll = 4 Fufs.

Querdurchschnitt.

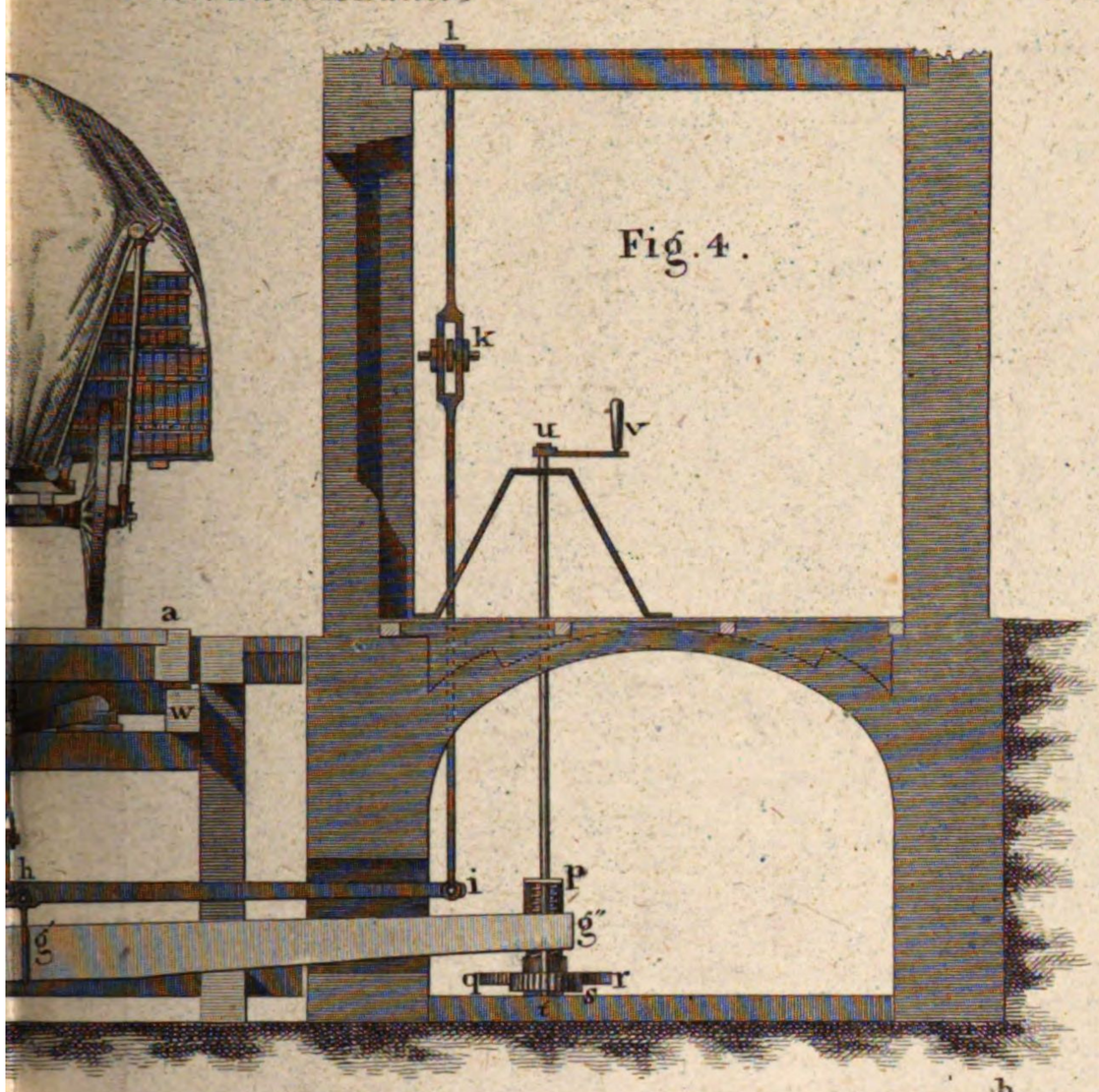


Fig. 4.

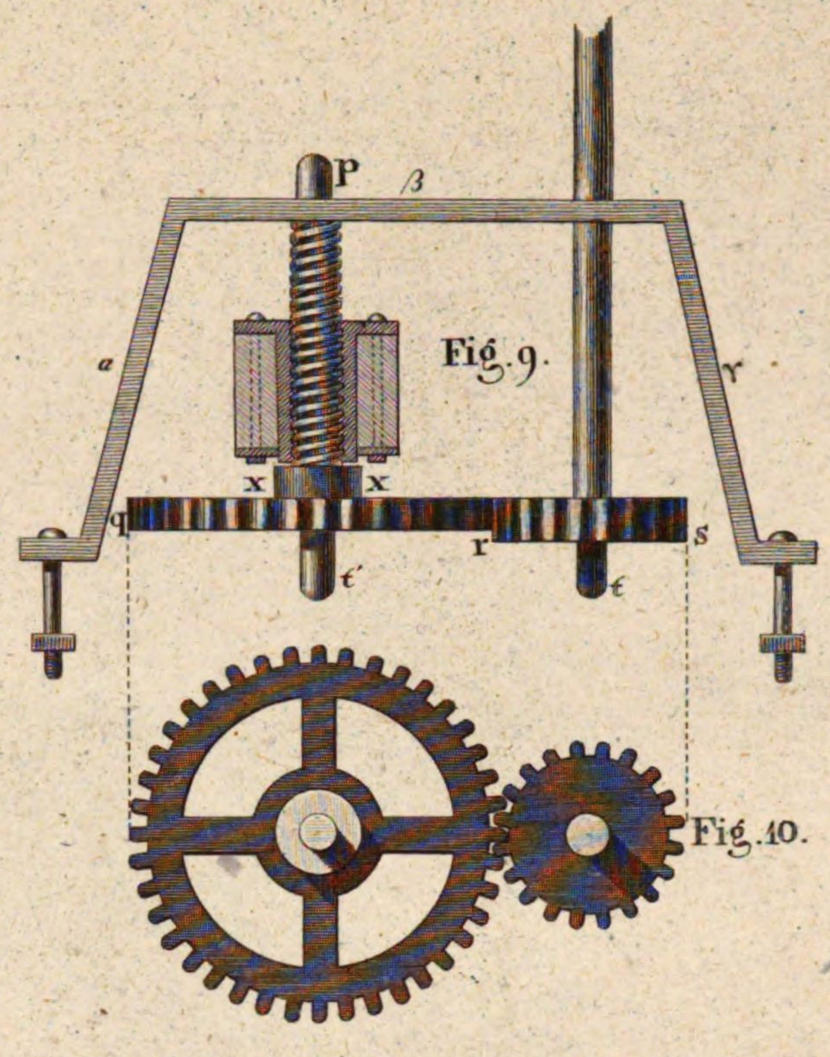


Fig. 9.

Fig. 10.

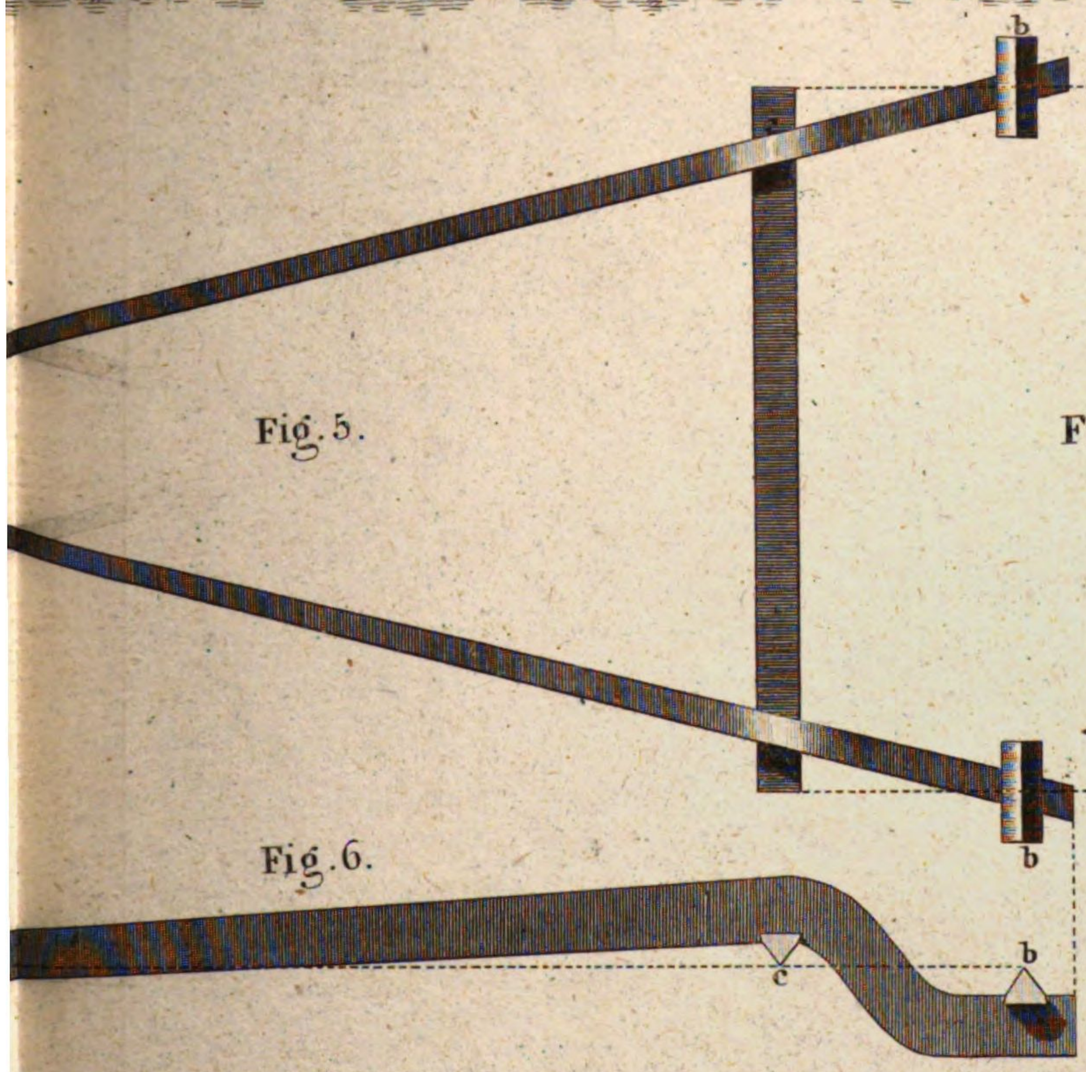
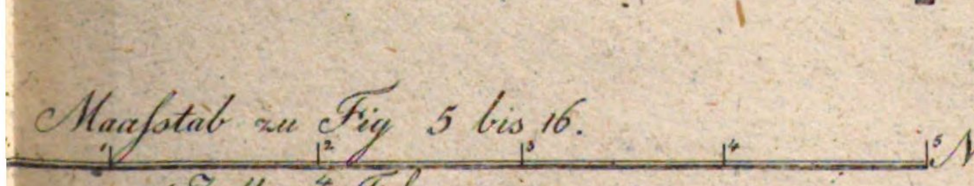


Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.



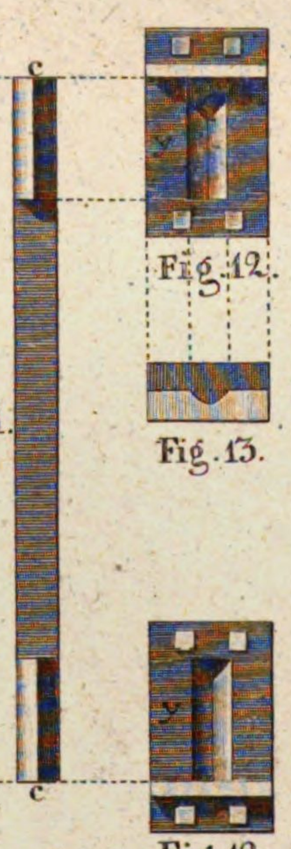


Fig. 11.

Fig. 12.

Fig. 13.

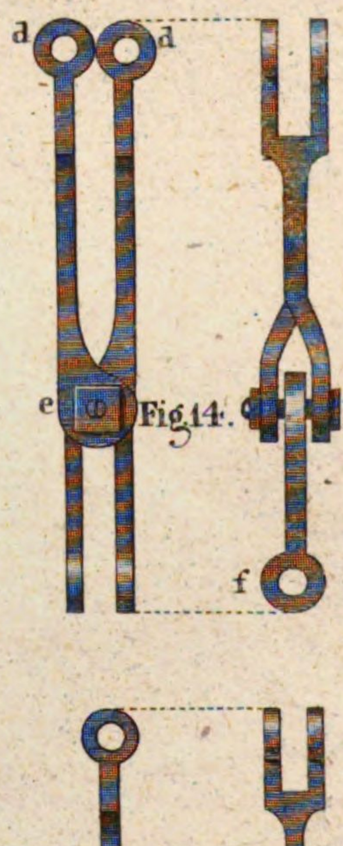


Fig. 14.

Fig. 15.

Fig. 16.

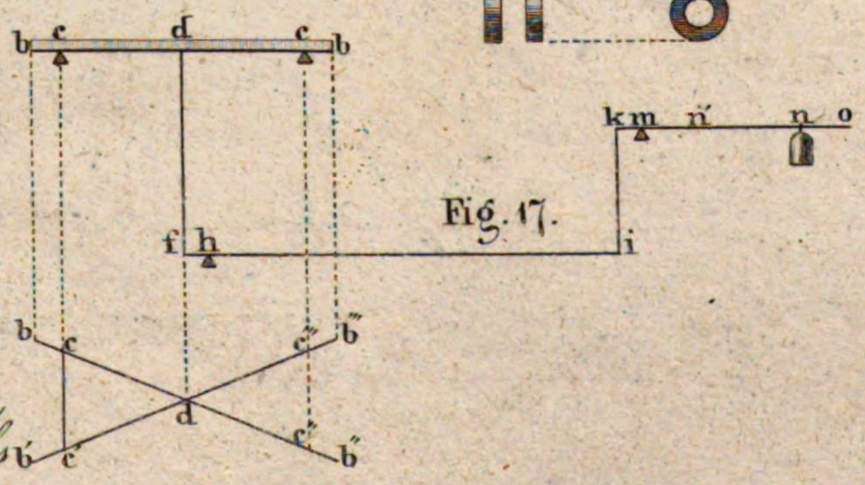


Fig. 17.

Maaßstab zu Fig 5 bis 16.

1 2 3 4 5 *N.Ö. Fuß*

1 Zoll = 1/6 Fuß.

Jos. Skala fc. Praga.

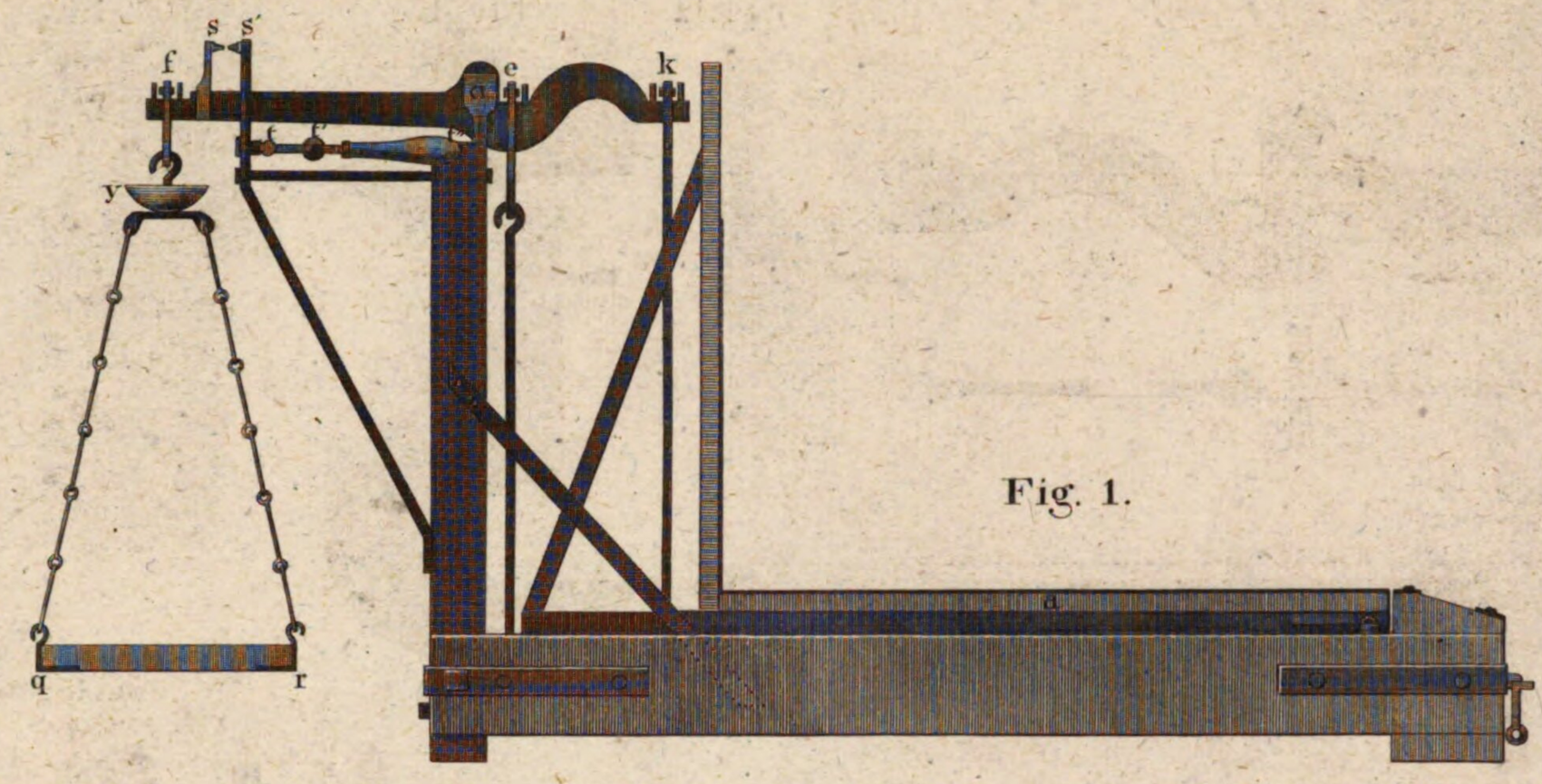


Fig. 1.

Fig. 6. Fig. 7. Fig. 8. Fig. 9.

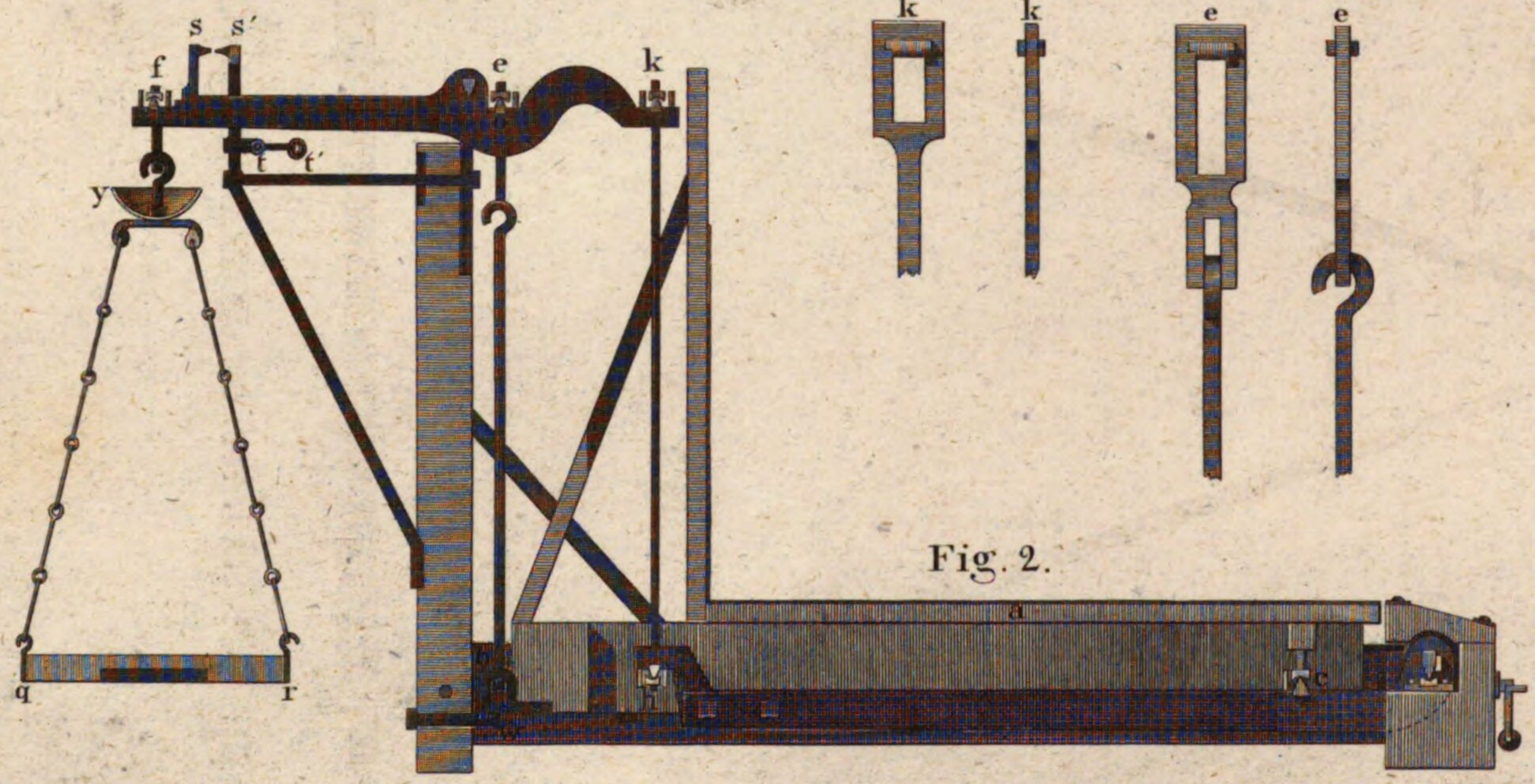


Fig. 2.

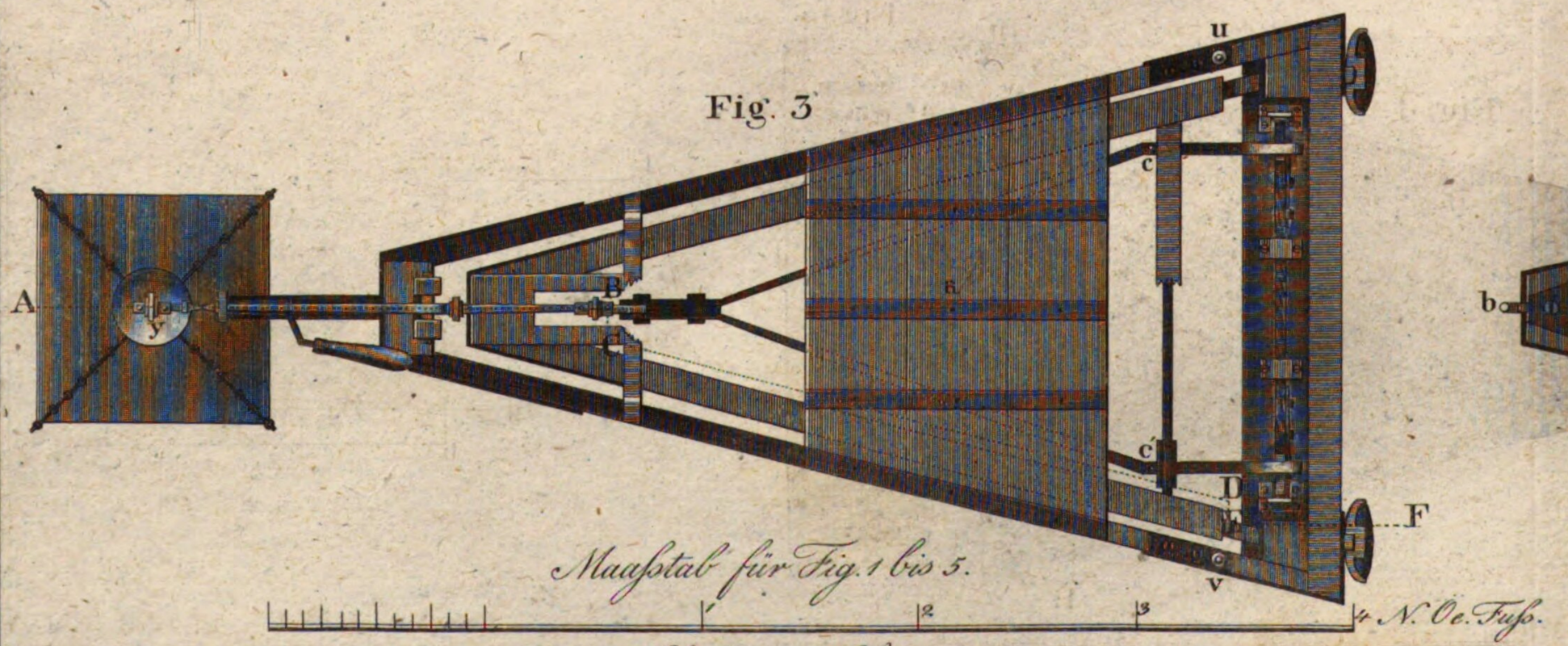


Fig. 3

Maafsstab für Fig. 1 bis 5.

1 Zoll = 1 Fufs.

N. Oe. Fufs.

BRÜCKENWAGE.

Nº 11.

Fig. 10.

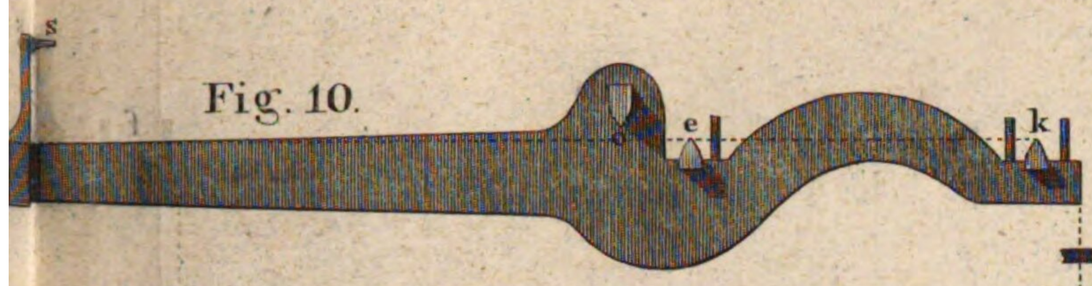


Fig. 11.

Fig. 12.

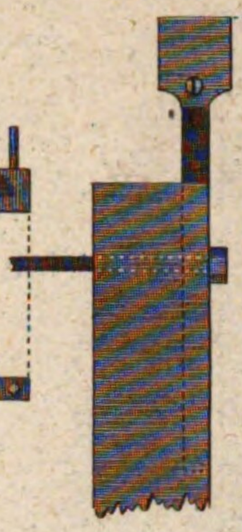


Fig. 13.

Fig. 14.

Fig. 15.

Fig. 16.

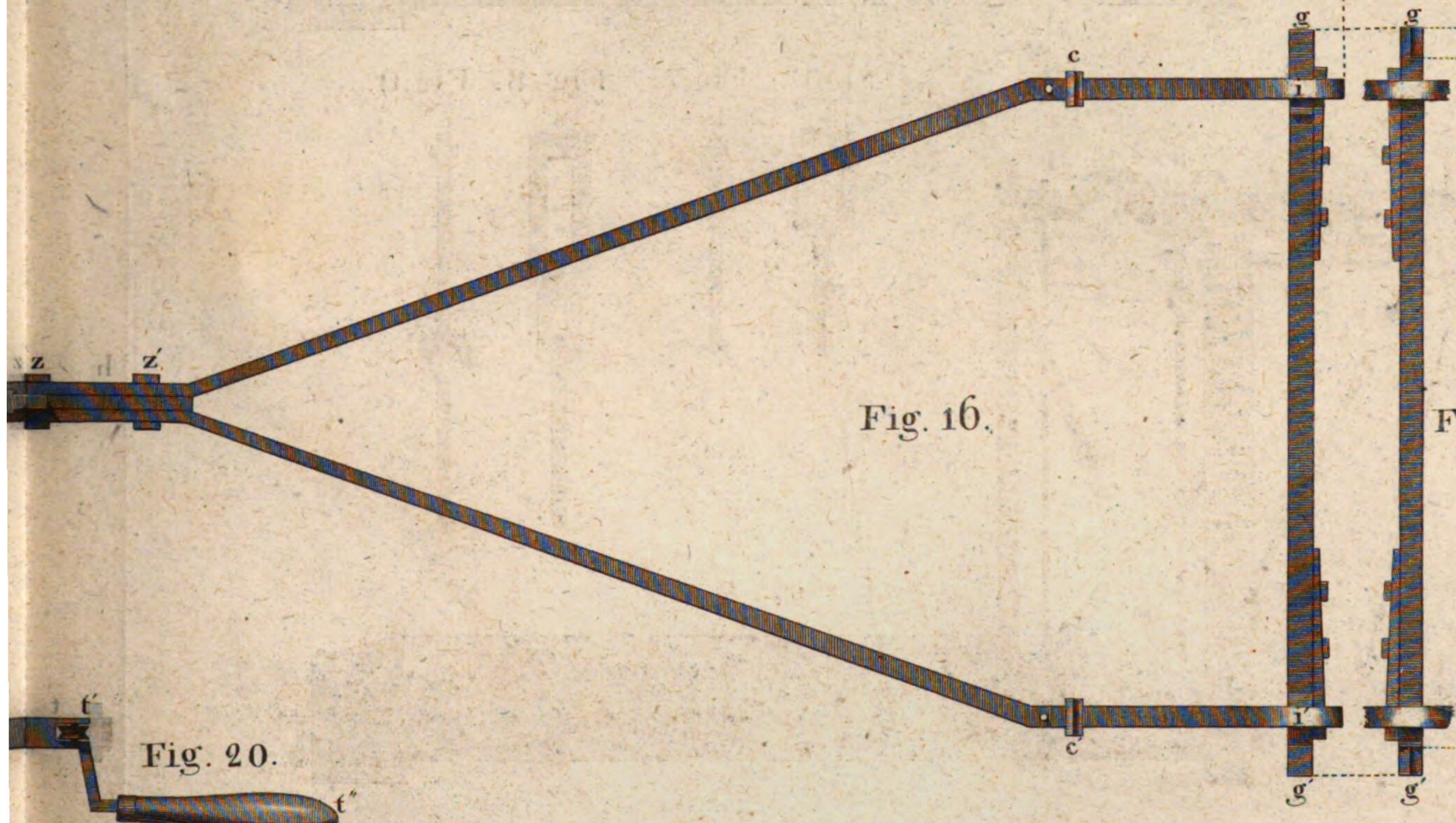


Fig. 17.

Fig. 18.

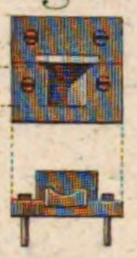


Fig. 19.

Fig. 20.

Fig. 4.

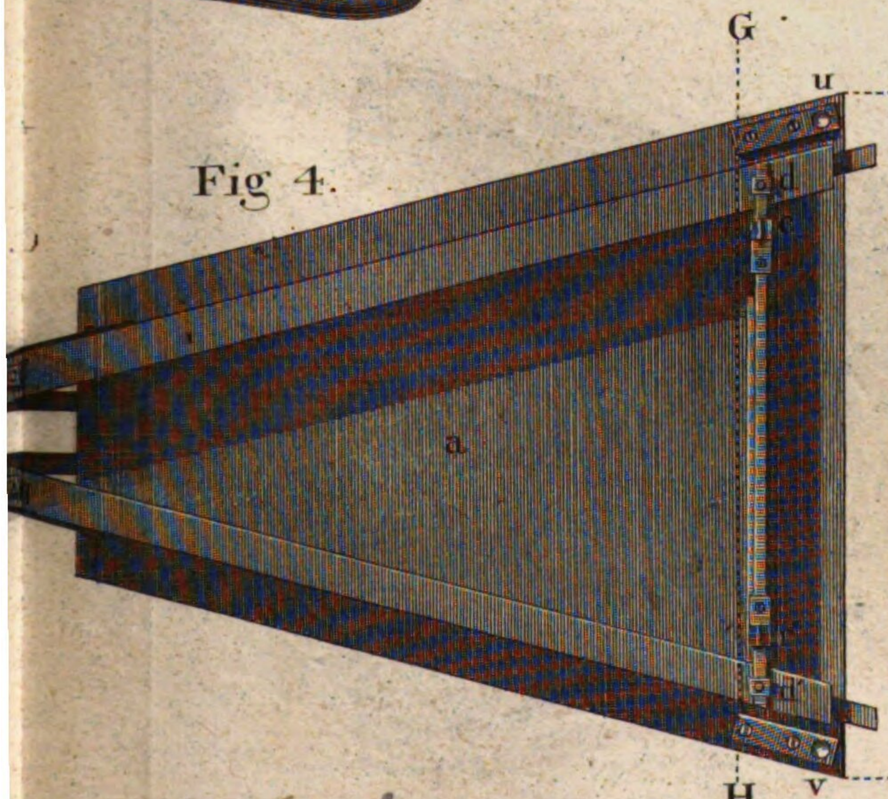
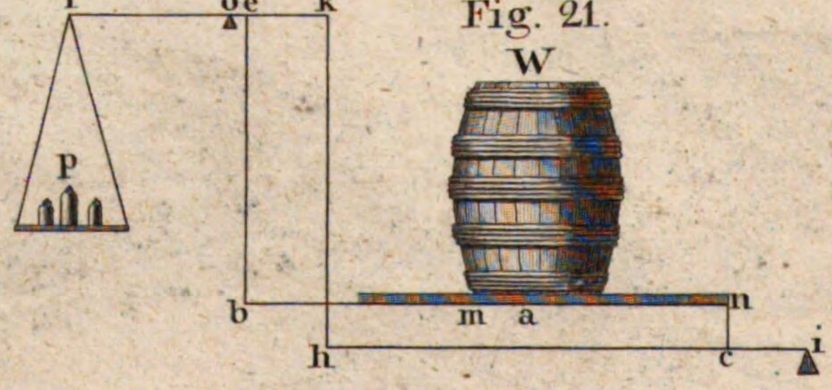


Fig. 5.

Fig. 21.



Maafsstab für Fig. 6 bis 20.

2 N. Oc. Fuſs.

2 Zoll = 1 Fuſs.

Jos. Skala sc. Praga. 1830.

Gemeine Federwage.

Fig. 1.

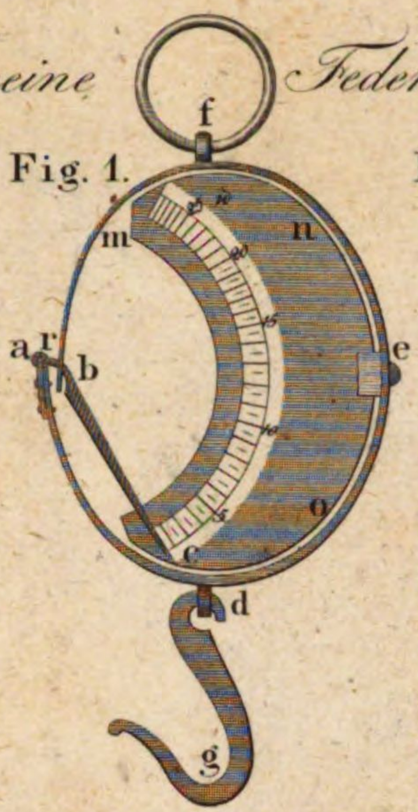
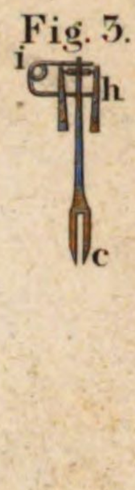
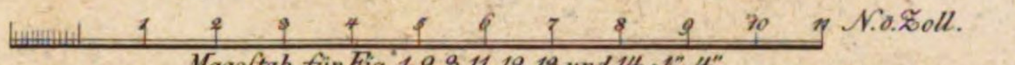


Fig. 2.

Fig. 3.





Maasstab für Fig. 1, 2, 3, 11, 12, 13 und 14; 1"=4"

Vordere Ansic

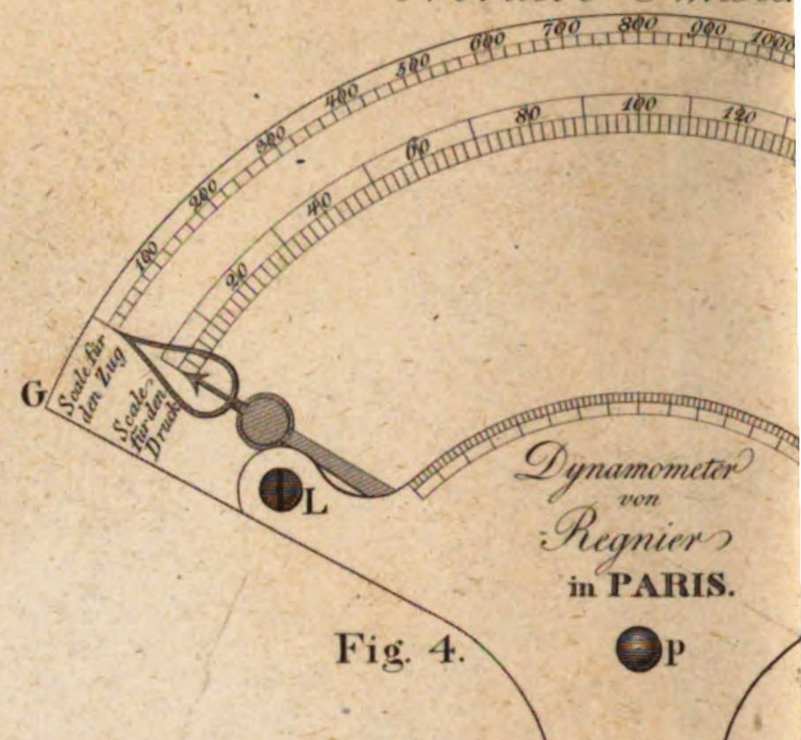
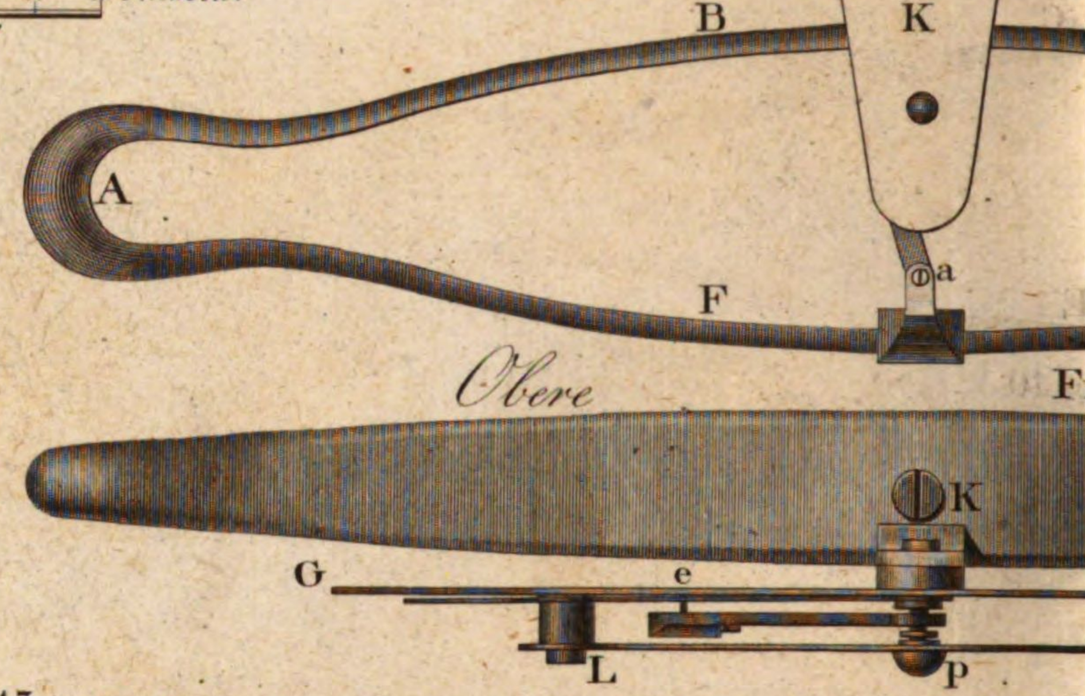


Fig. 4.



Maasstab für Fig. 4 bis 10 ; 1"=2

Fig. 11.

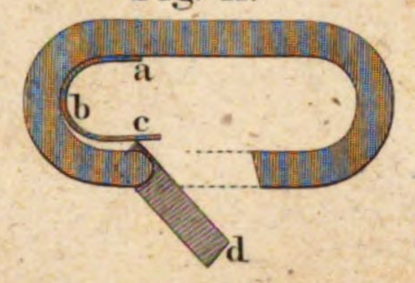


Fig. 12.

Fig. 13.

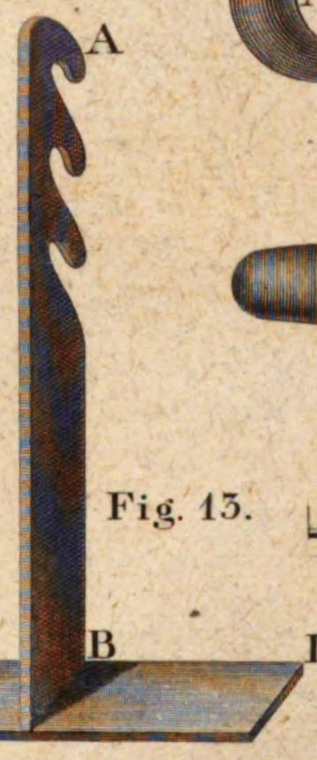
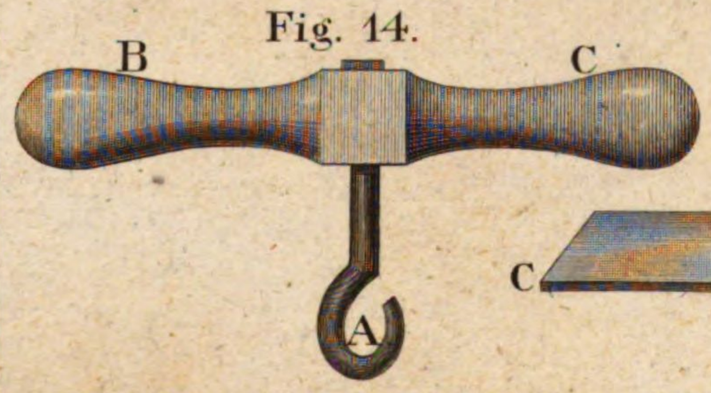
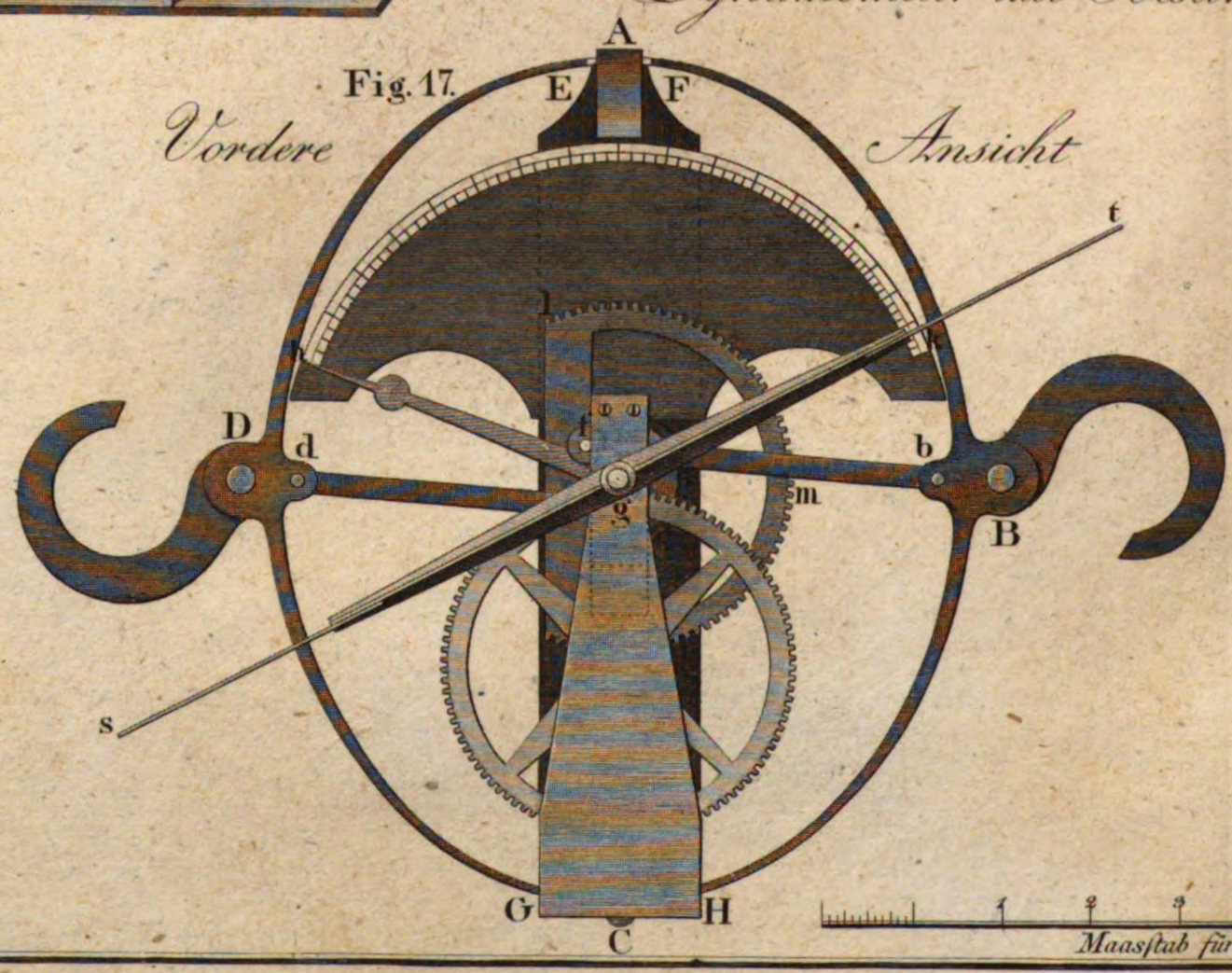


Fig. 14.



Dynamometer zur Bestimmu

Fig. 17.



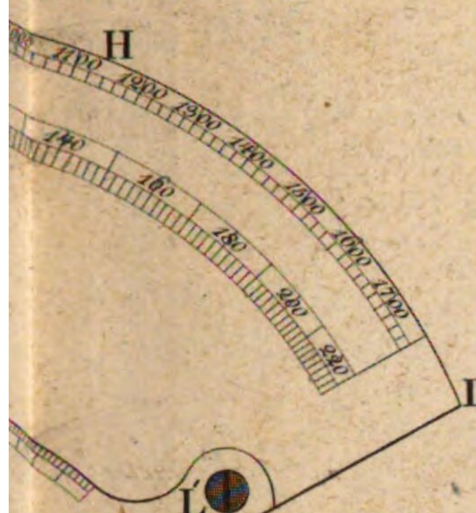
Maasstab für Fig. 17

Fig. 16.

icht.

Durchschnitt nach der Fläche.

Seiten-Ansicht.



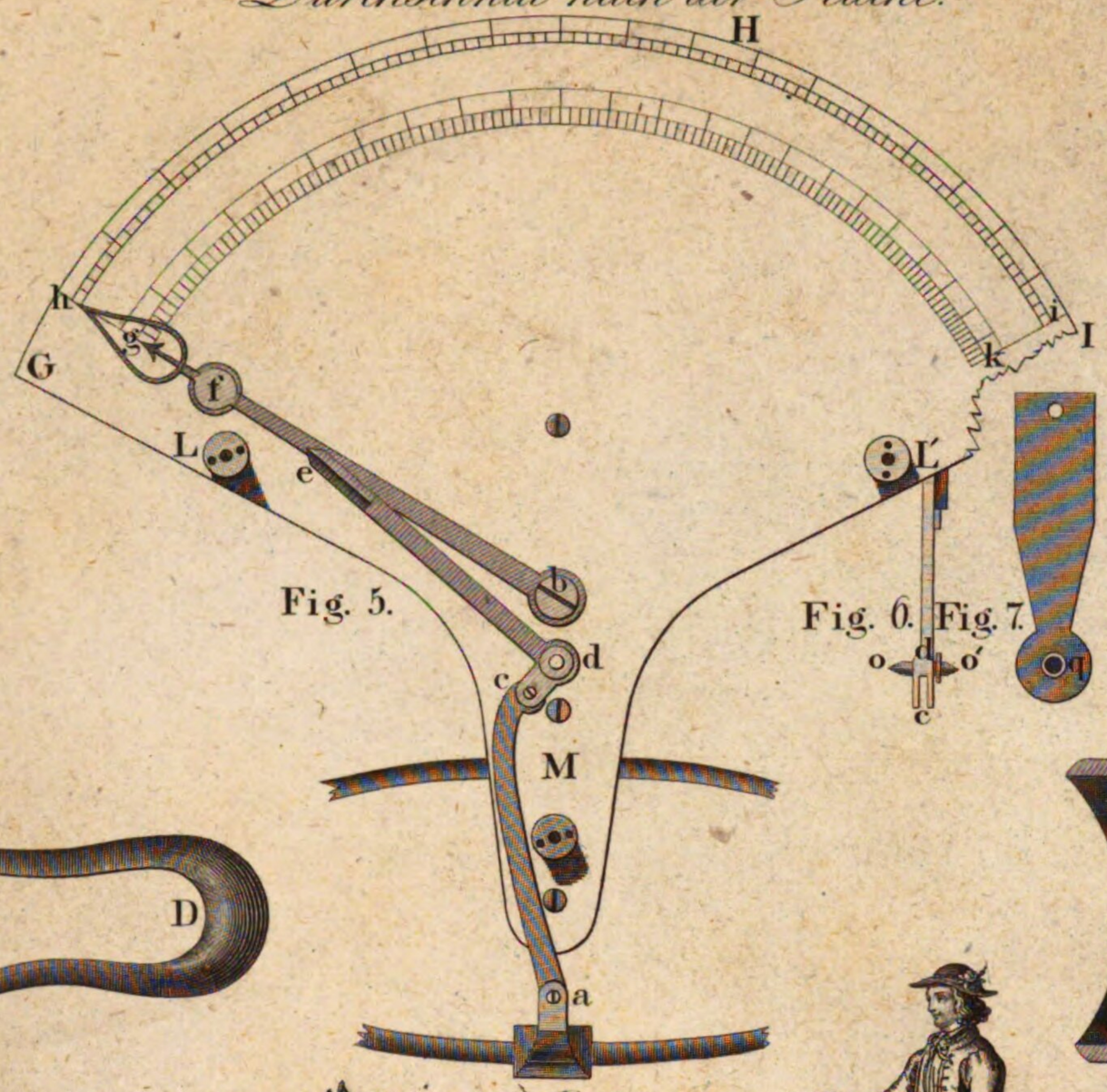


Fig. 5.

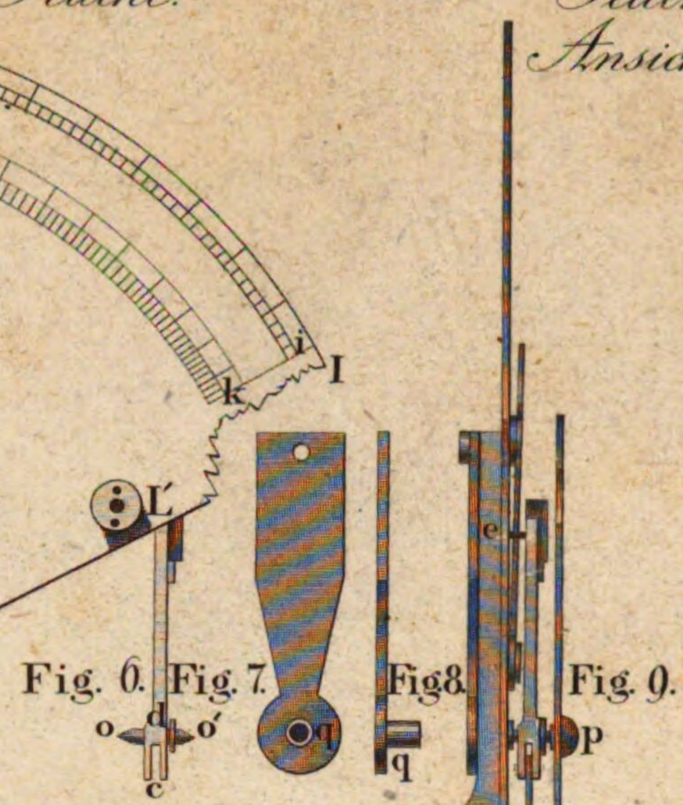


Fig. 6. Fig. 7. Fig8. Fig. 9.

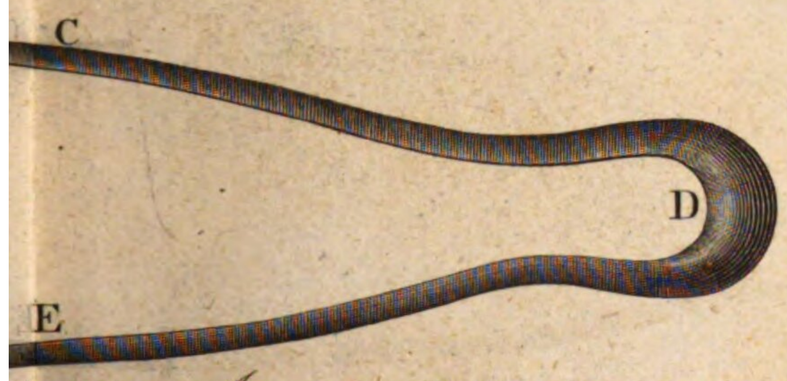


Fig. 10. *Ansicht.*

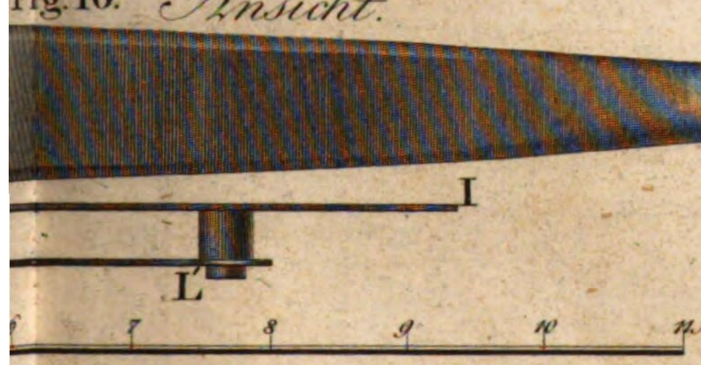
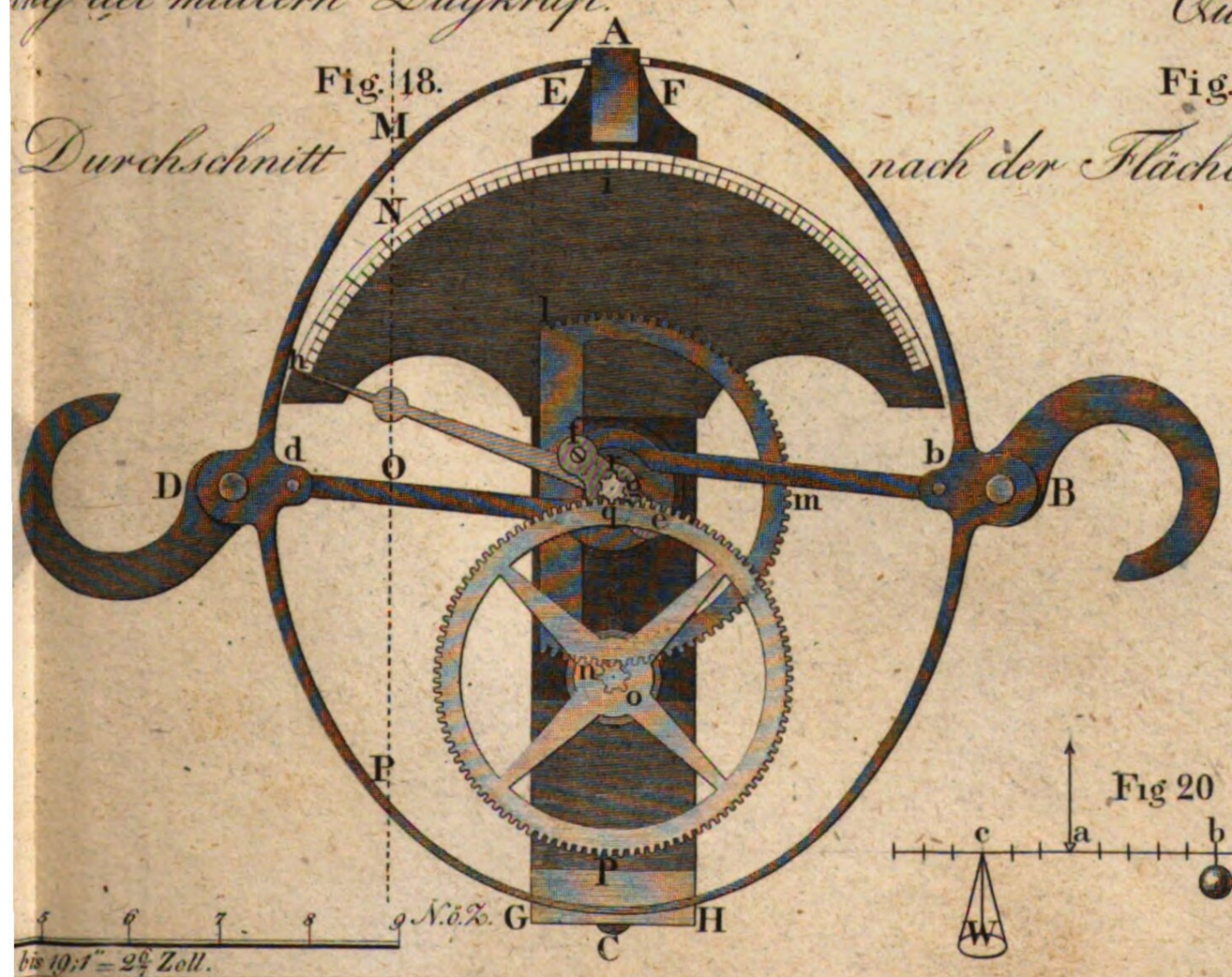


Fig. 15.

ung der mittlern Zugkraft.

Querdurchschnitt in M.P.

Fig. 18.



Durchschnitt nach der Fläche.

Fig. 19.

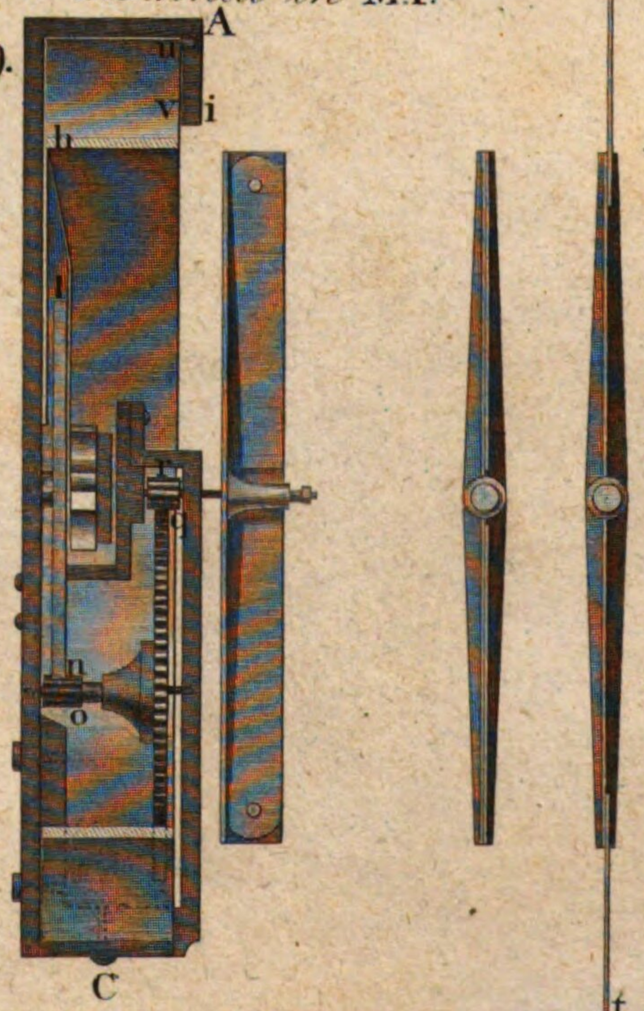


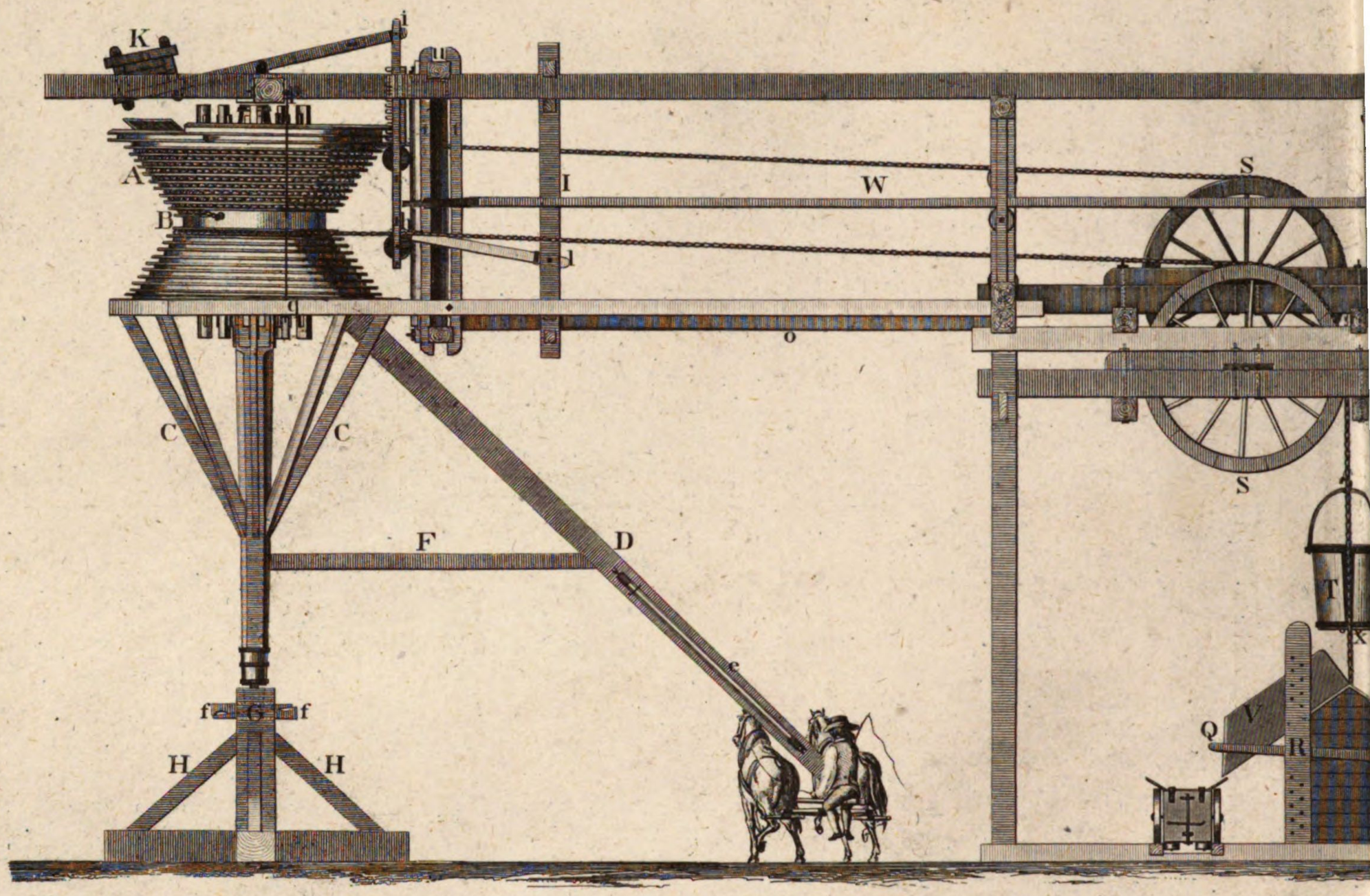
Fig 20

bis 19;1" = 2⅝ Zoll.

Jos. Skala sc. Praga 1890.

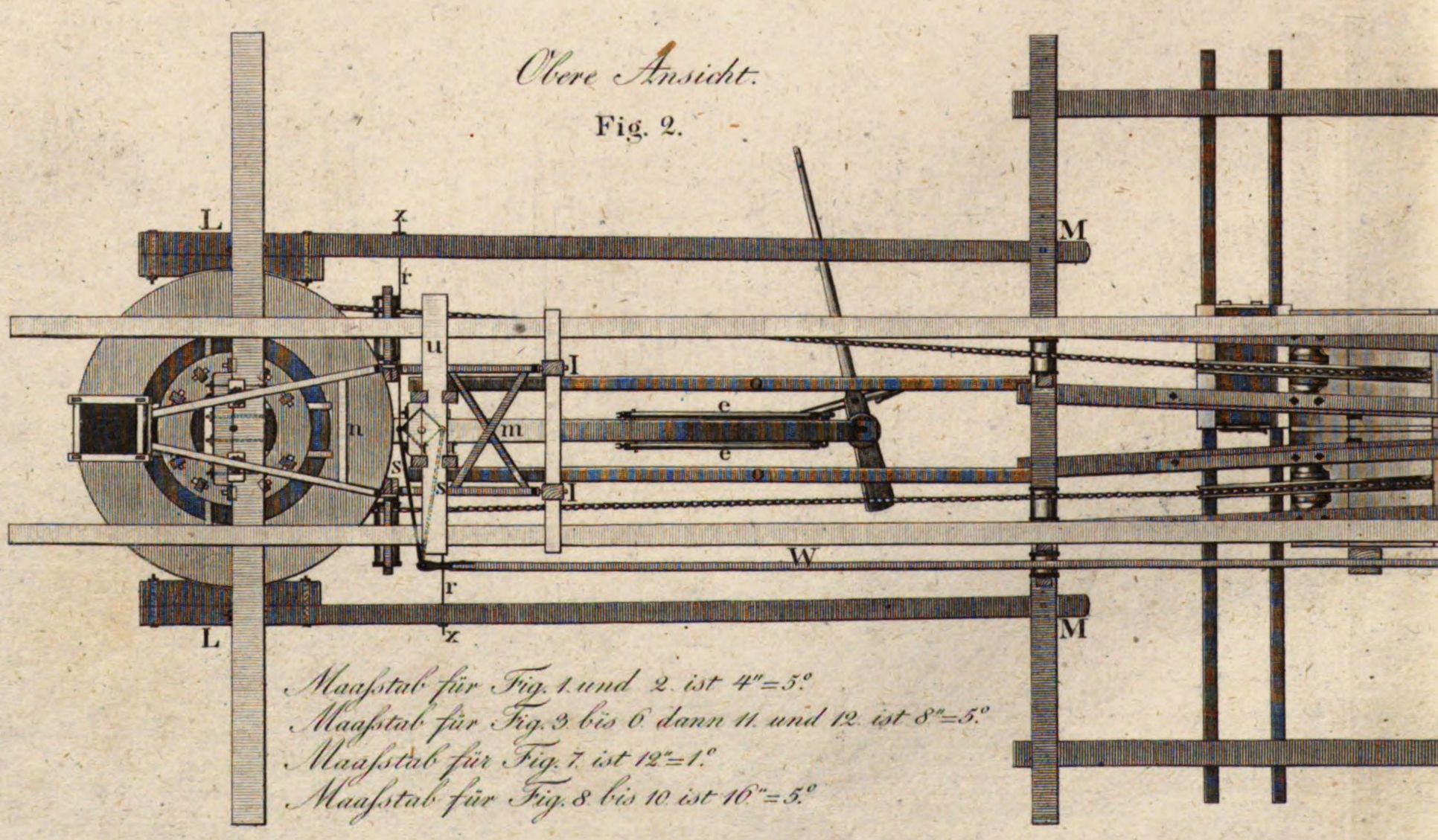
Längenansicht.

Fig. 1.



Obere Ansicht.

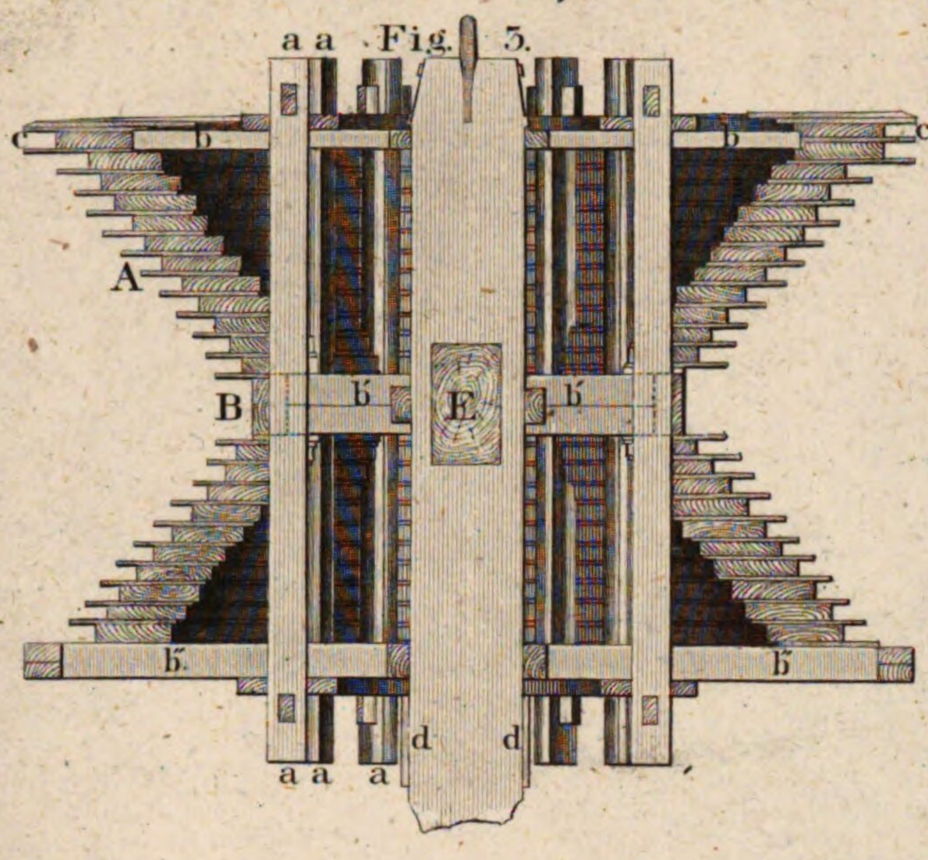
Fig. 2.



Maafsstab für Fig. 1 und 2. ist 4"=5.°
Maafsstab für Fig. 3 bis 6 dann 11. und 12. ist 8"=5.°
Maafsstab für Fig. 7. ist 12"=1.°
Maafsstab für Fig. 8 bis 10 ist 16"=5.°

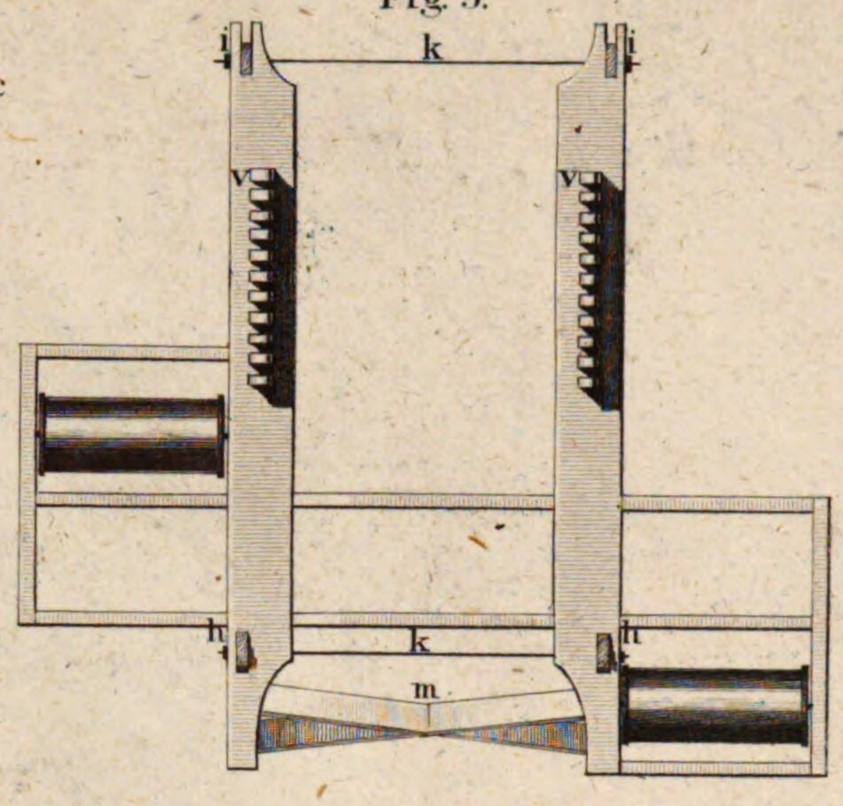
Durchschnitt des Spiralwerkes.

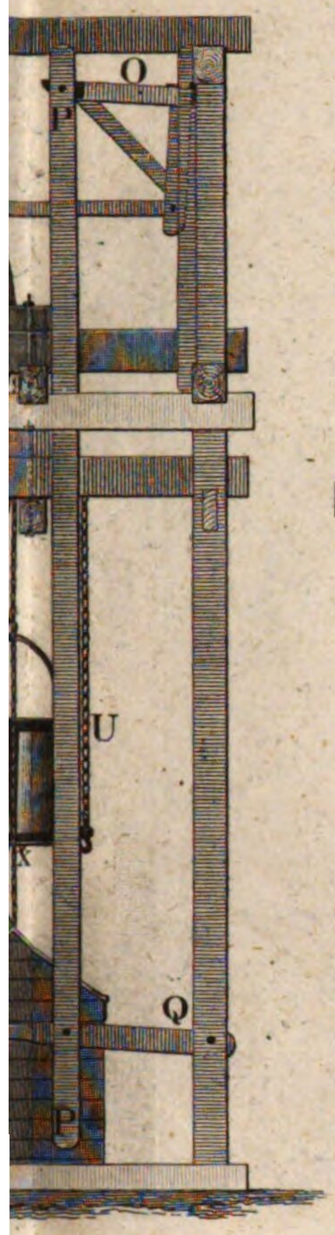
Fig. 5.



Seilleitung.

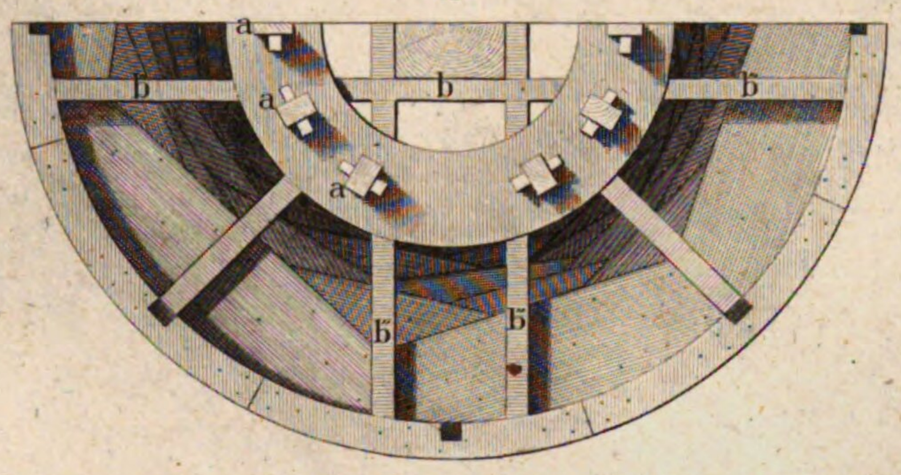
Fig. 5.





Untere Ansicht des Spiralkorbes.

Fig. 4.

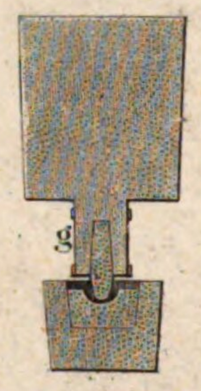


Treibkette.

Fig. 7.

Bluevel.

Fig. 8.



Bremse.

Fig. 6.

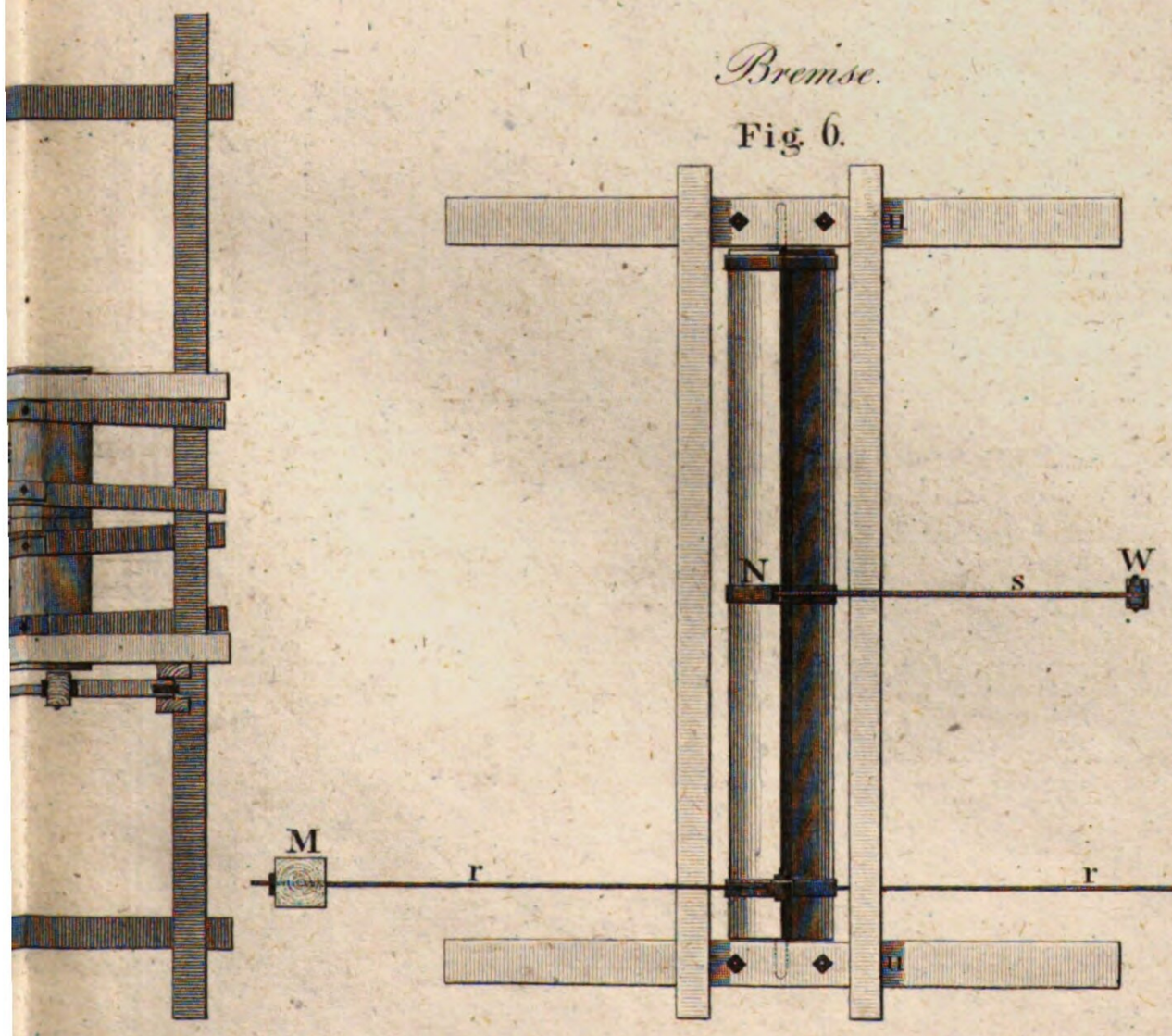


Fig. 9.

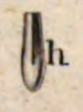
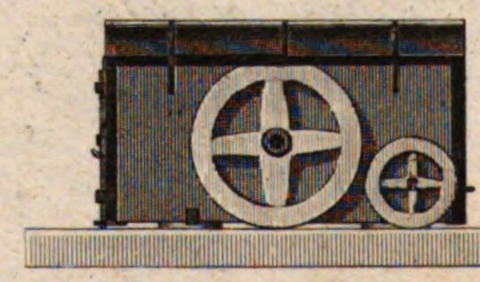


Fig. 10.

Laufhund.



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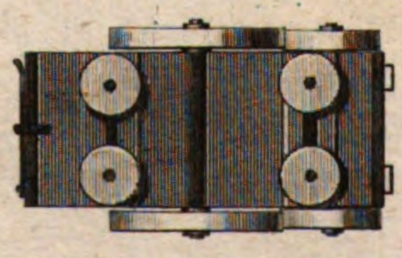


Fig. 12.

Ungarischer Pferdegöpel mit cylindrischem Korbe.

Fig. 1.

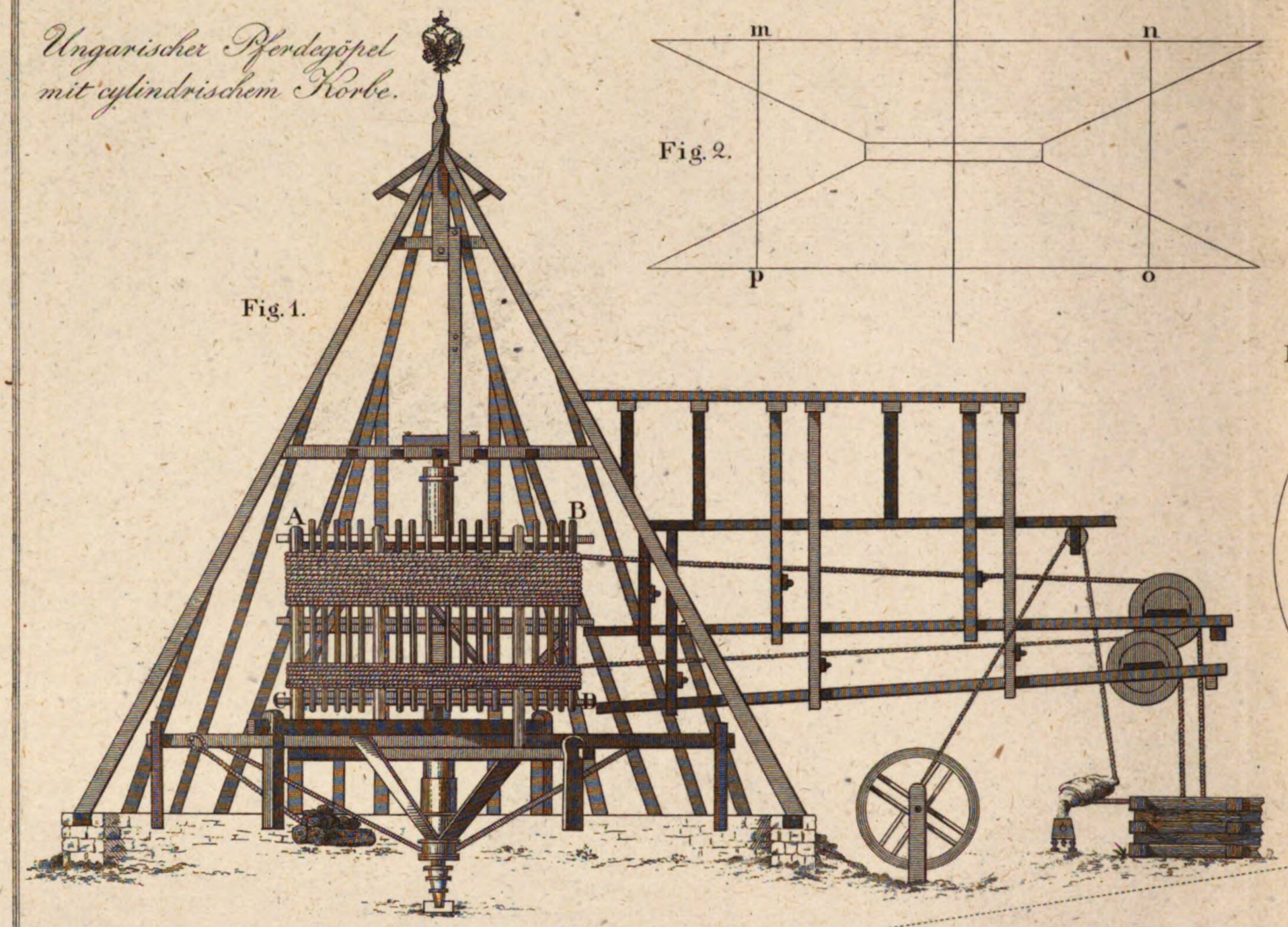


Fig. 2.

Fig.

Eigener Apparat zur Messung der Ausdehnung der Körper.

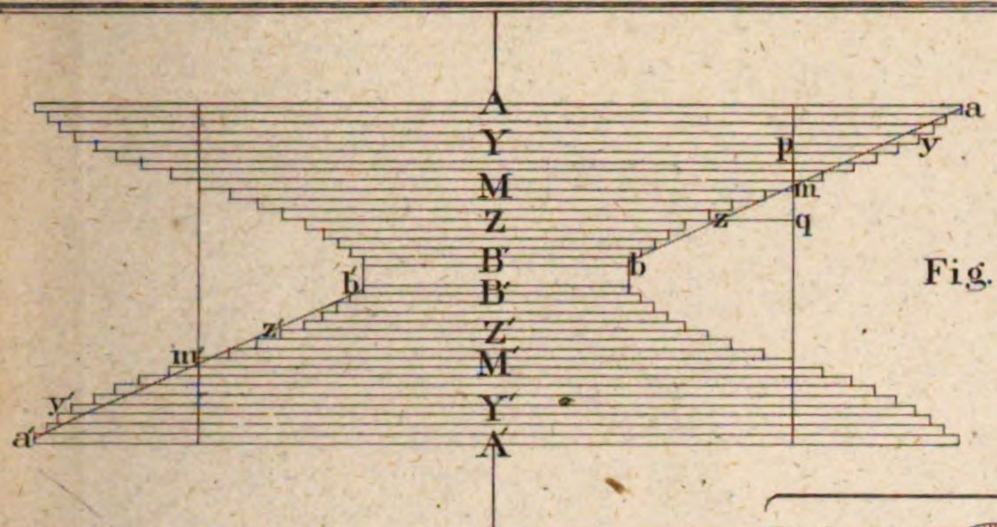
Fig. 8.

Maasstab für die gröfser gezeichneten Theile.

N. Oe. Zoll.

Maasstab für den Apparat.

N. Oe. Fufs.



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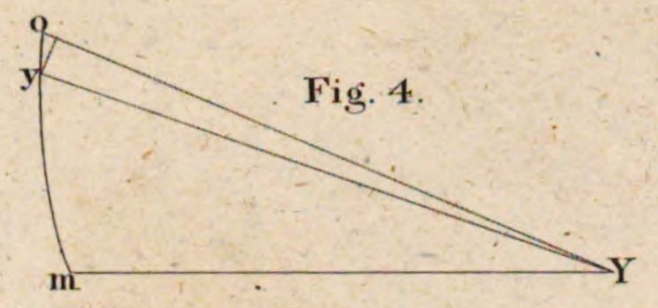

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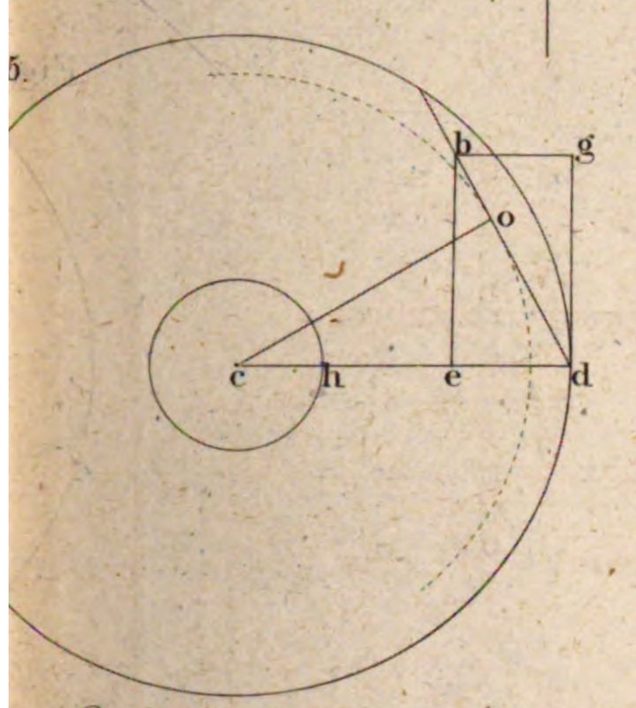
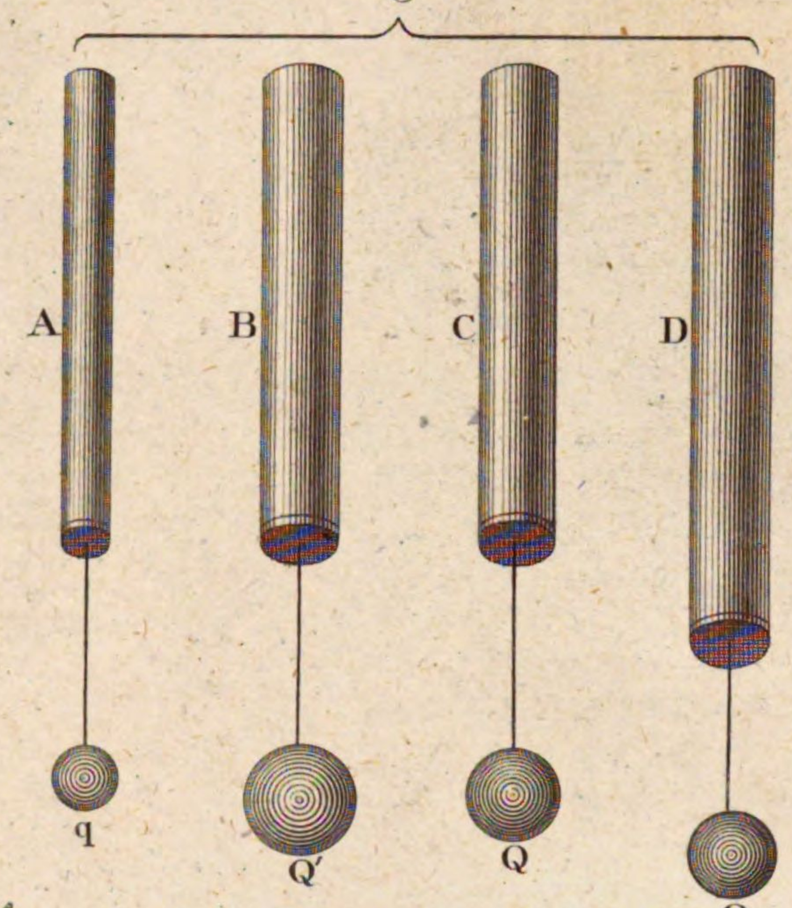


Fig. 5.

Fig. 6.



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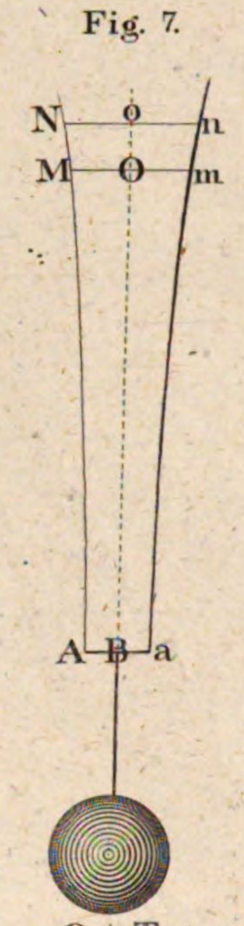
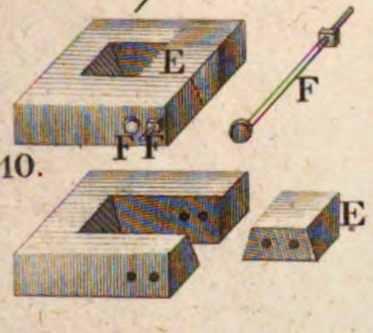


Hr Eytelwein's Apparat zur Bestimmung der absoluten Festigkeit der Körper.



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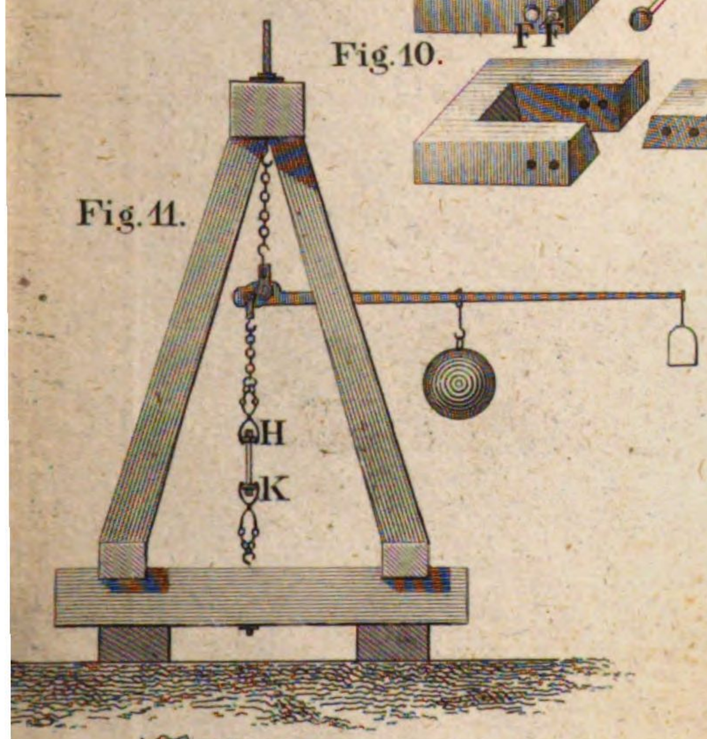


Fig. 11.

Fig. 9.

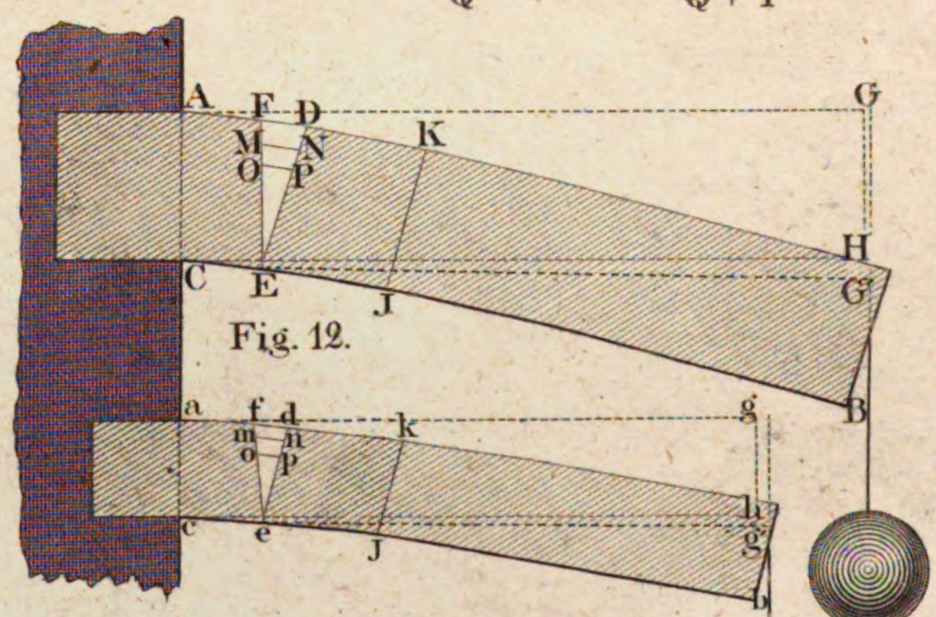
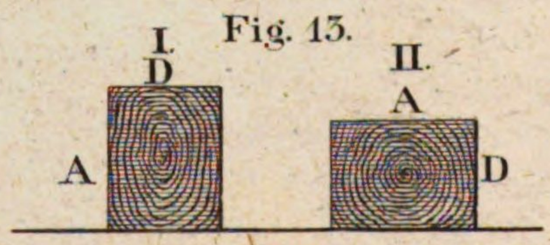


Fig. 12.

Fig. 13.



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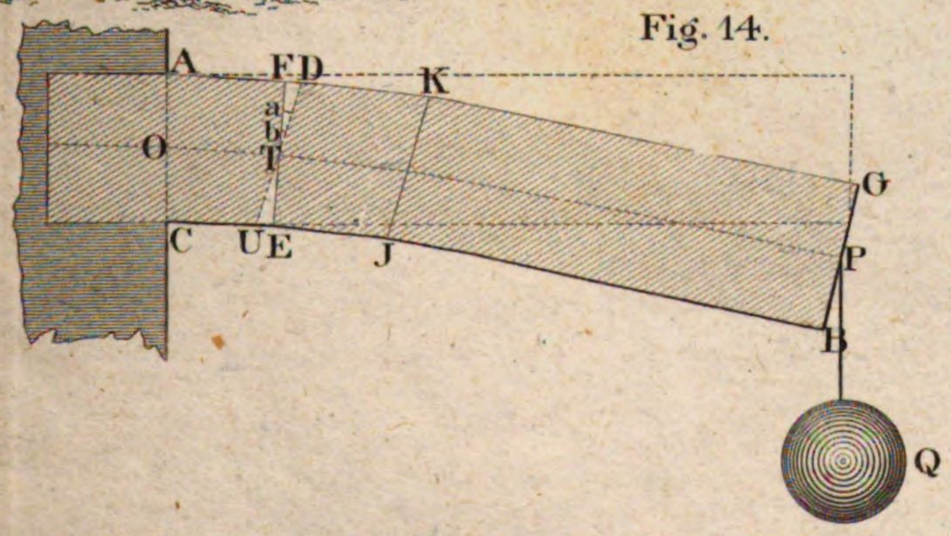

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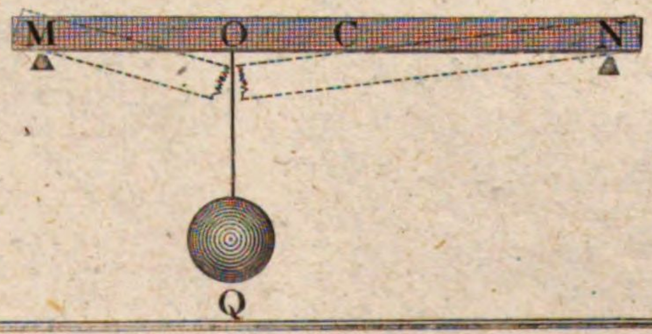

Aigner sc Vienna.

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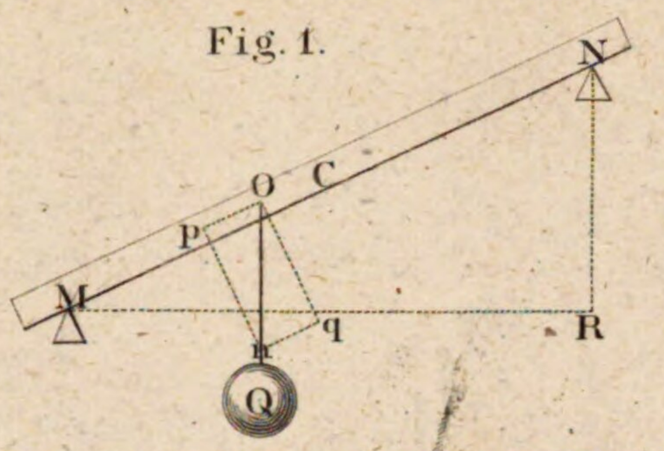

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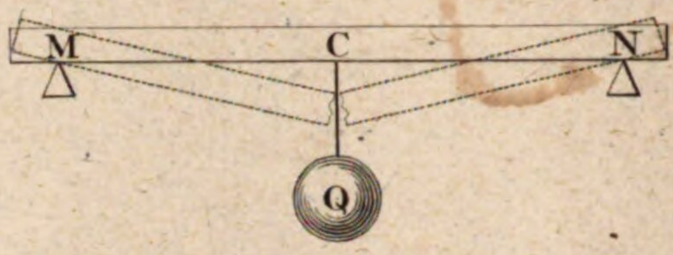

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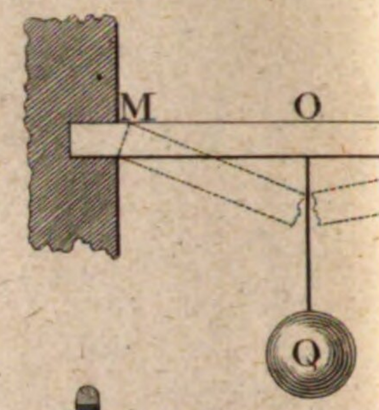


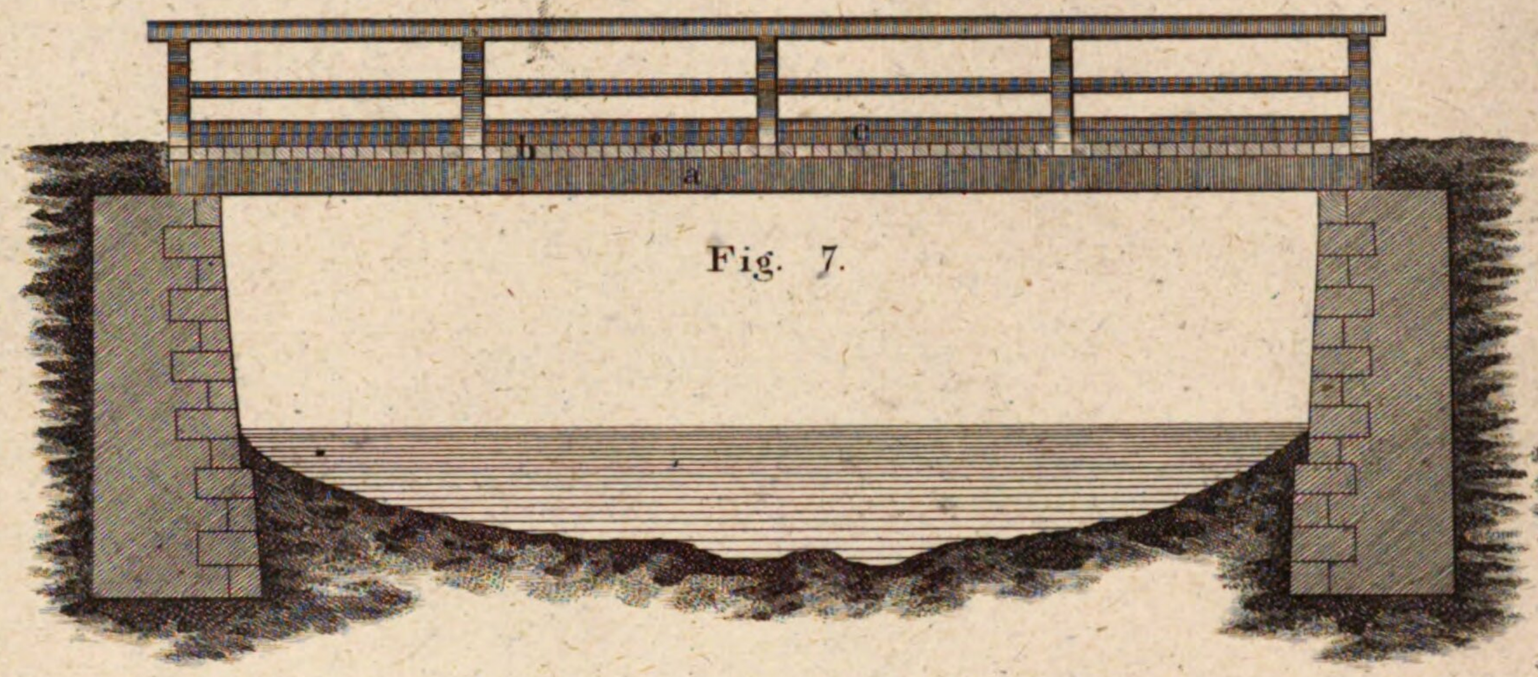
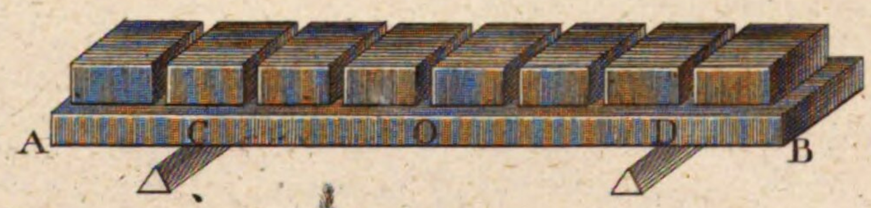


Fig. 7.

Fig. 11.



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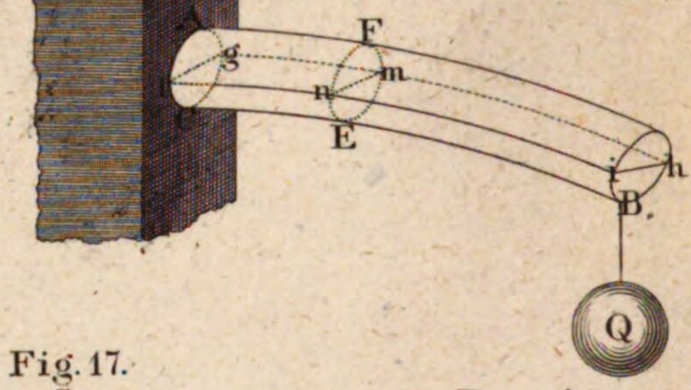

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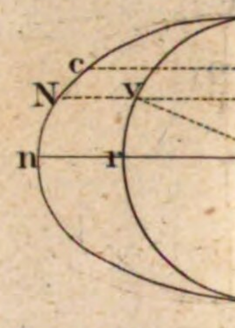

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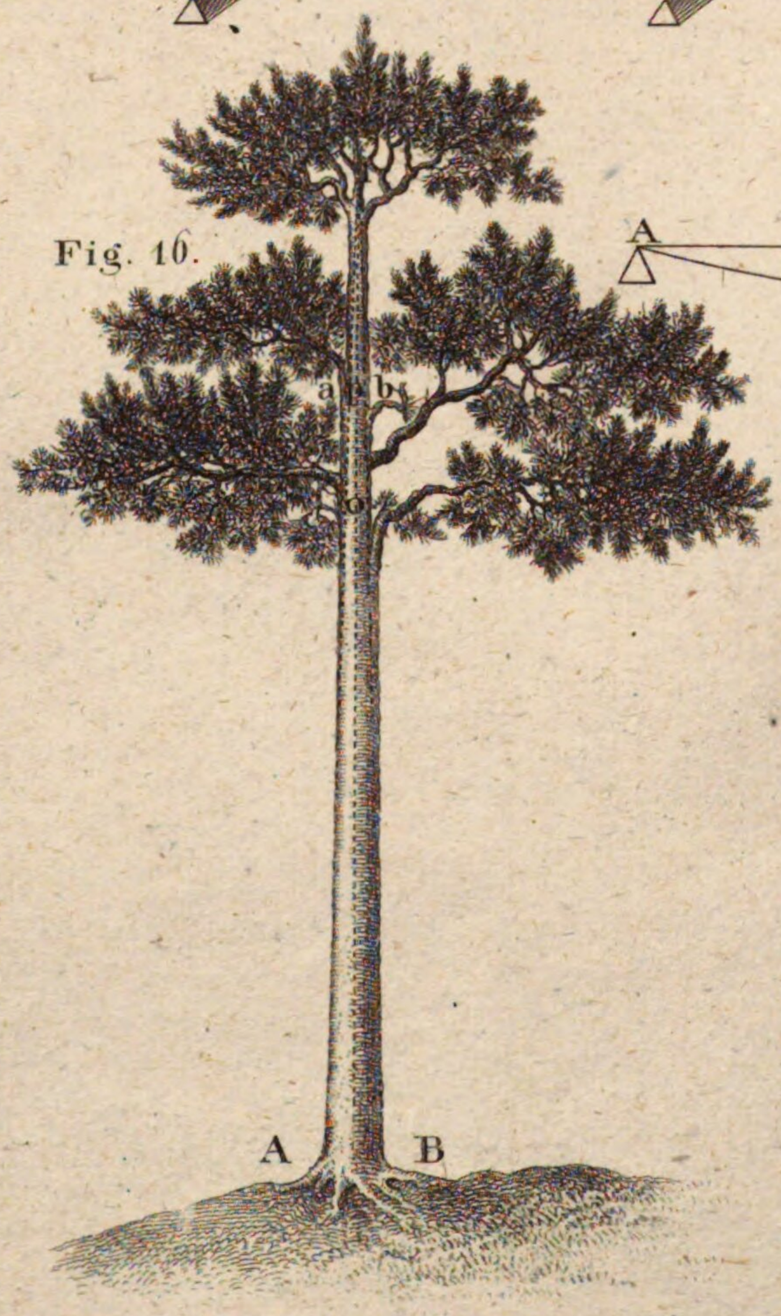

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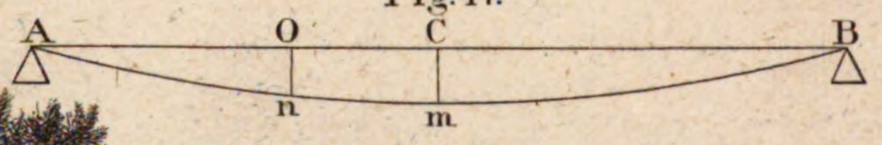

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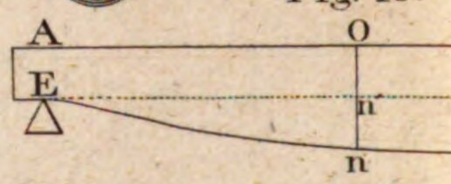

Fig. 19.

Fig. 20.

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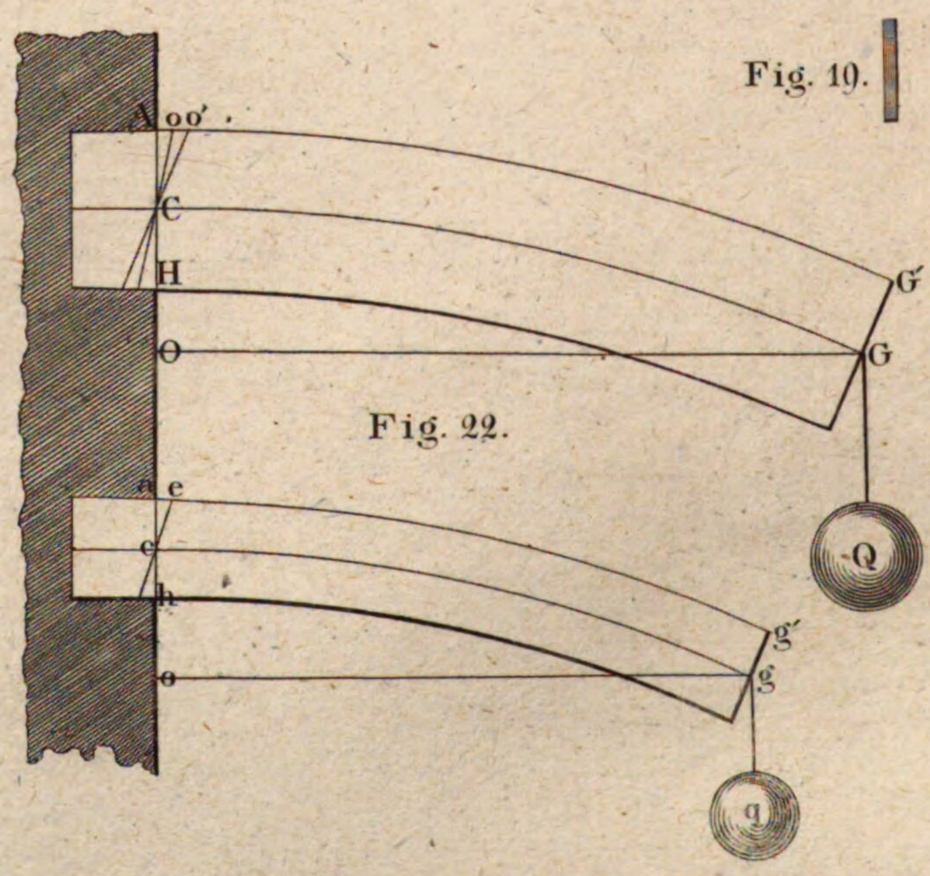

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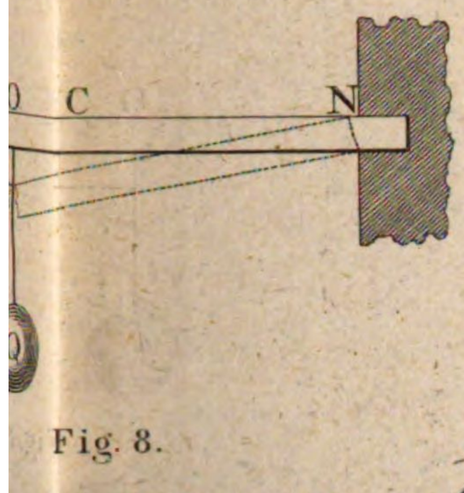

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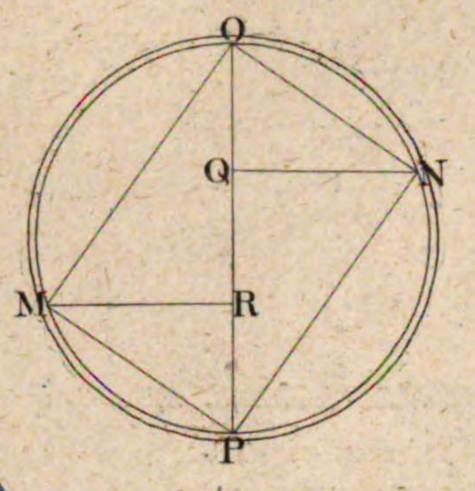

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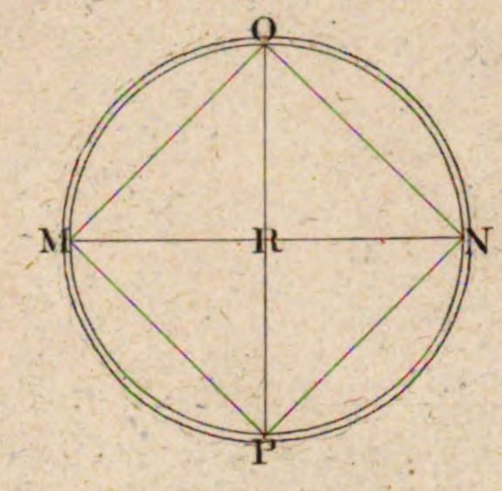

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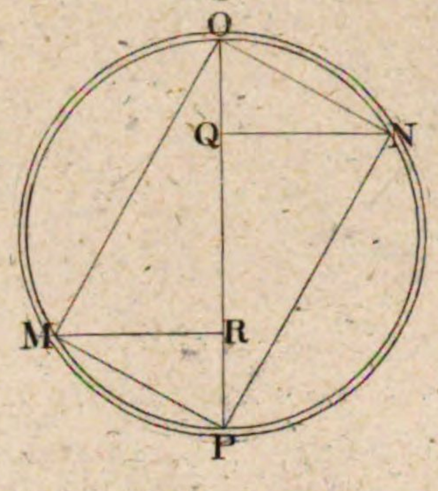

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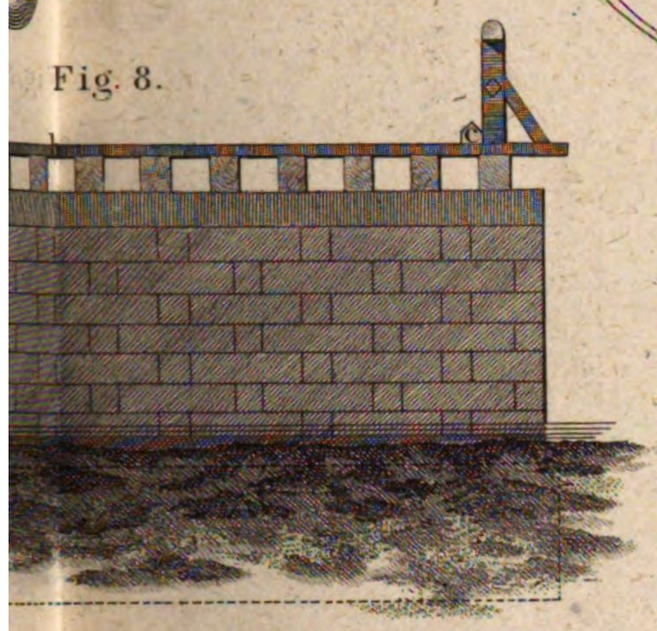

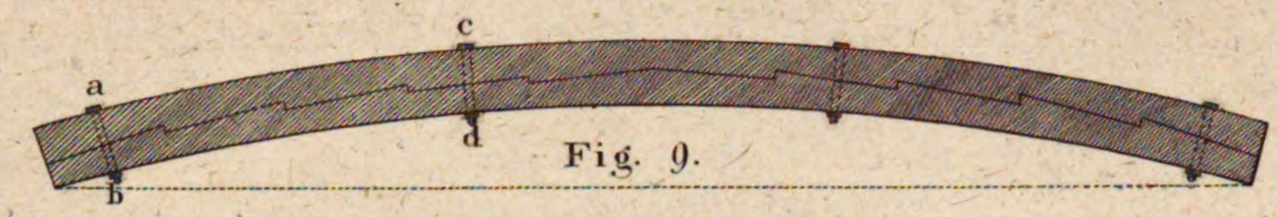

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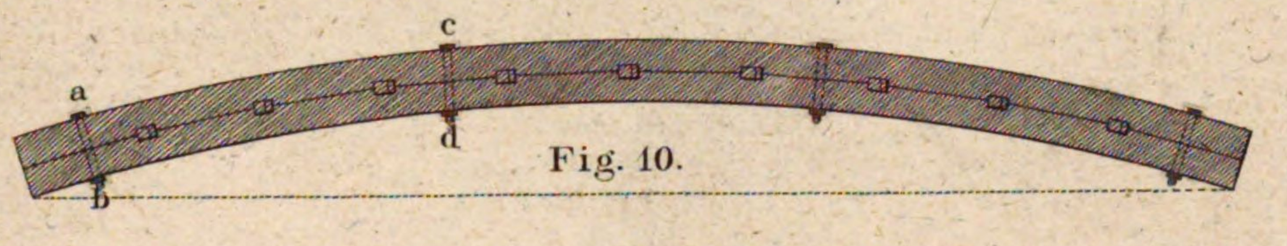
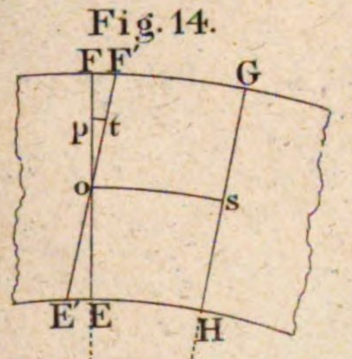


Fig. 10.

Fig. 14.



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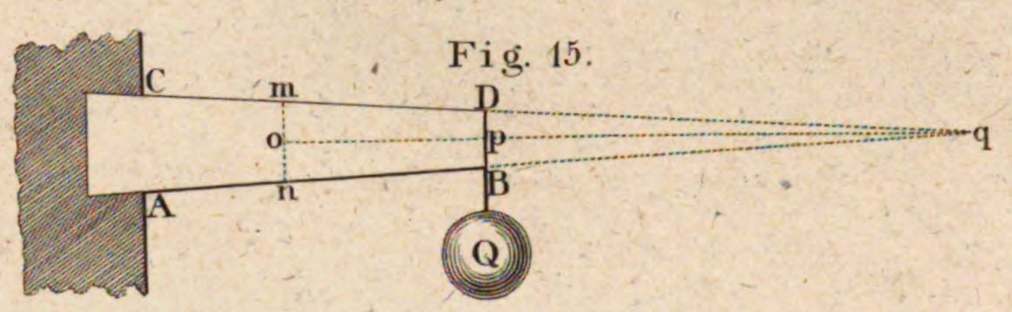

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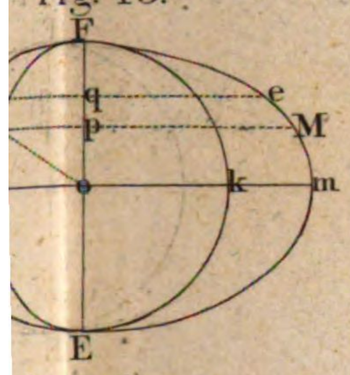

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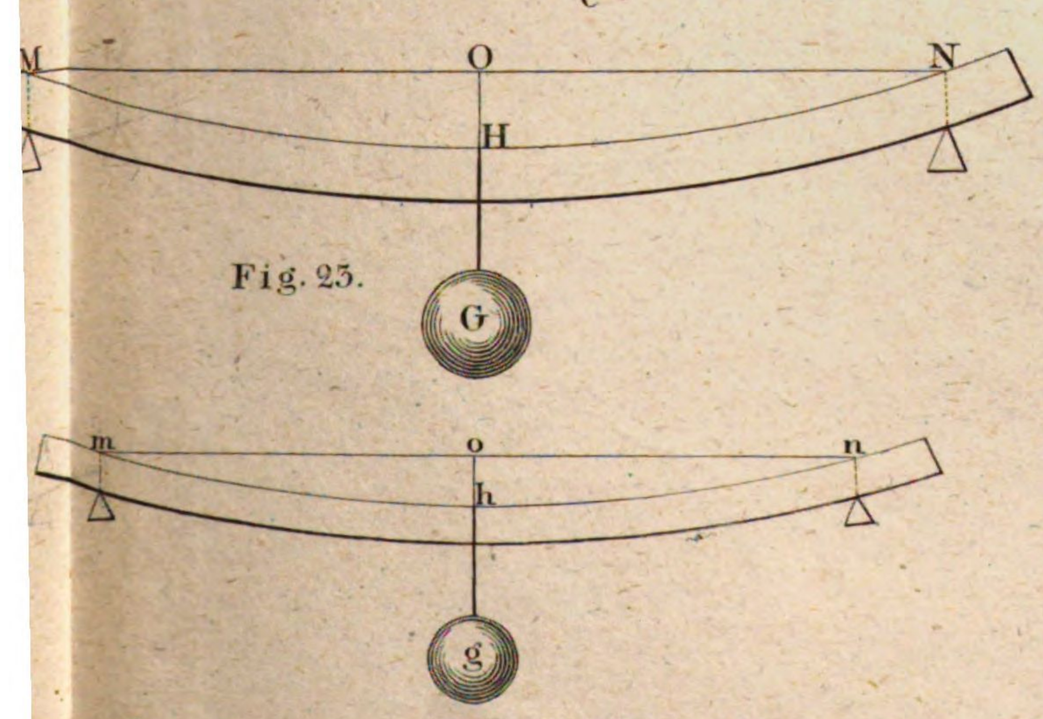

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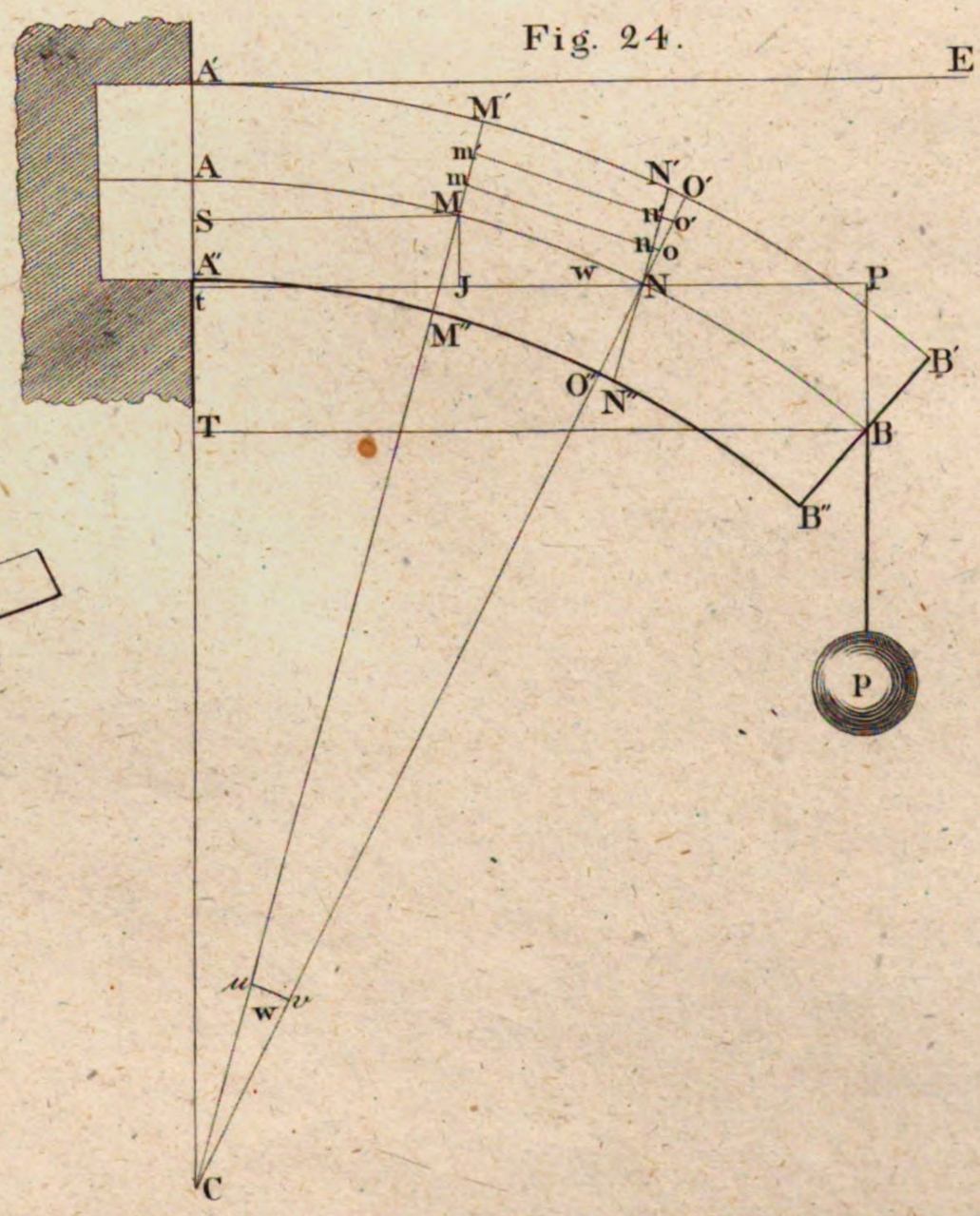


Bauer sc. Viennæ 1830.

Eigener Apparat zur Messung der Biegung der Körper.

Längenansicht.

Fig. 1.

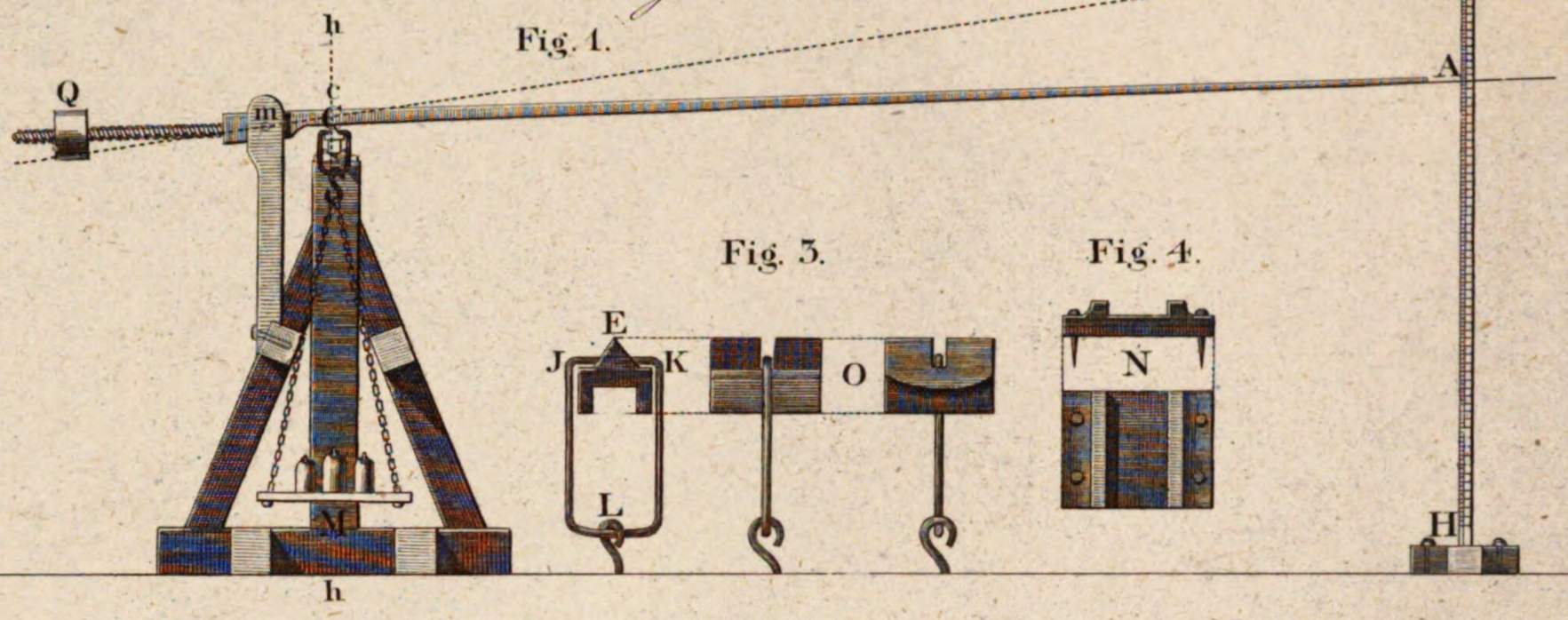
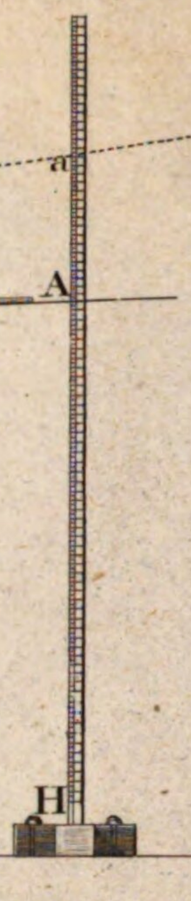


Fig. 3.

Fig. 4.



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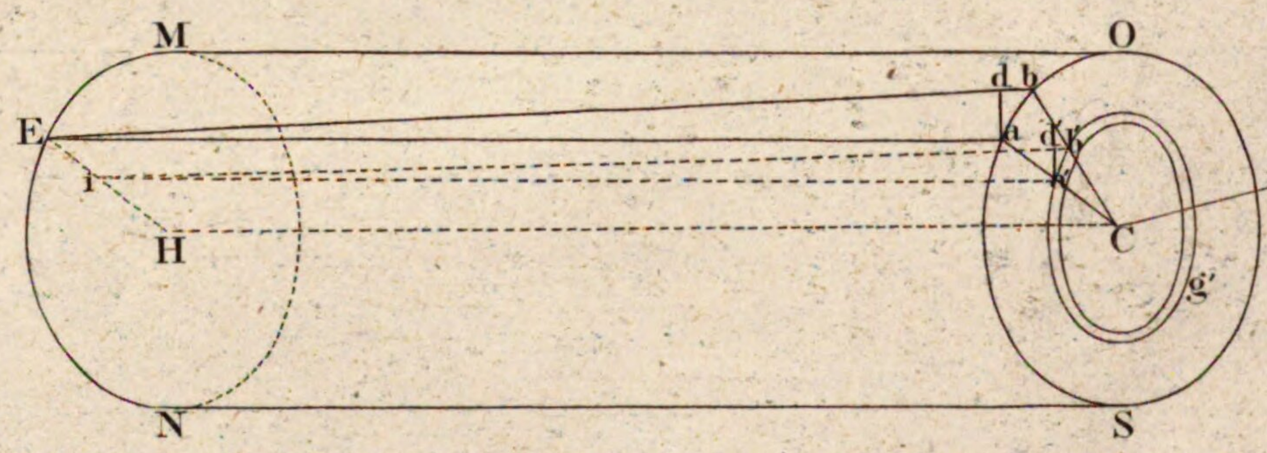
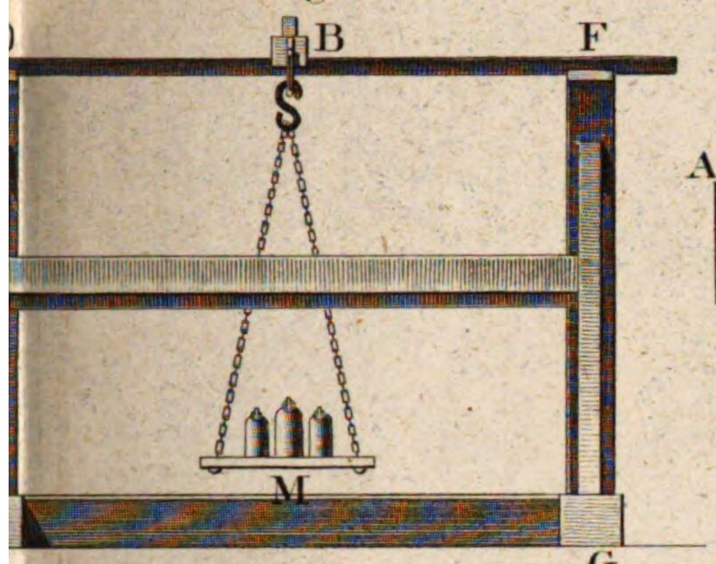


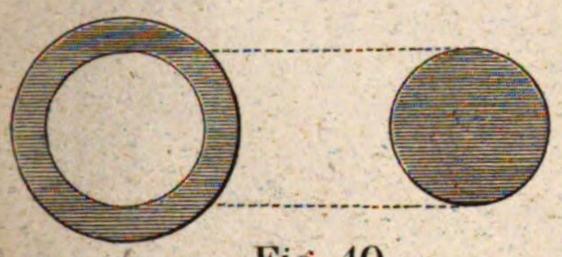
Fig. 11.

Fi

Vordere Ansicht

Fig. 2.





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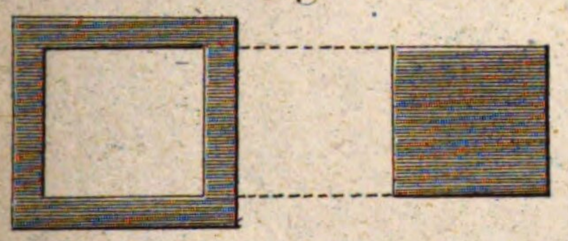

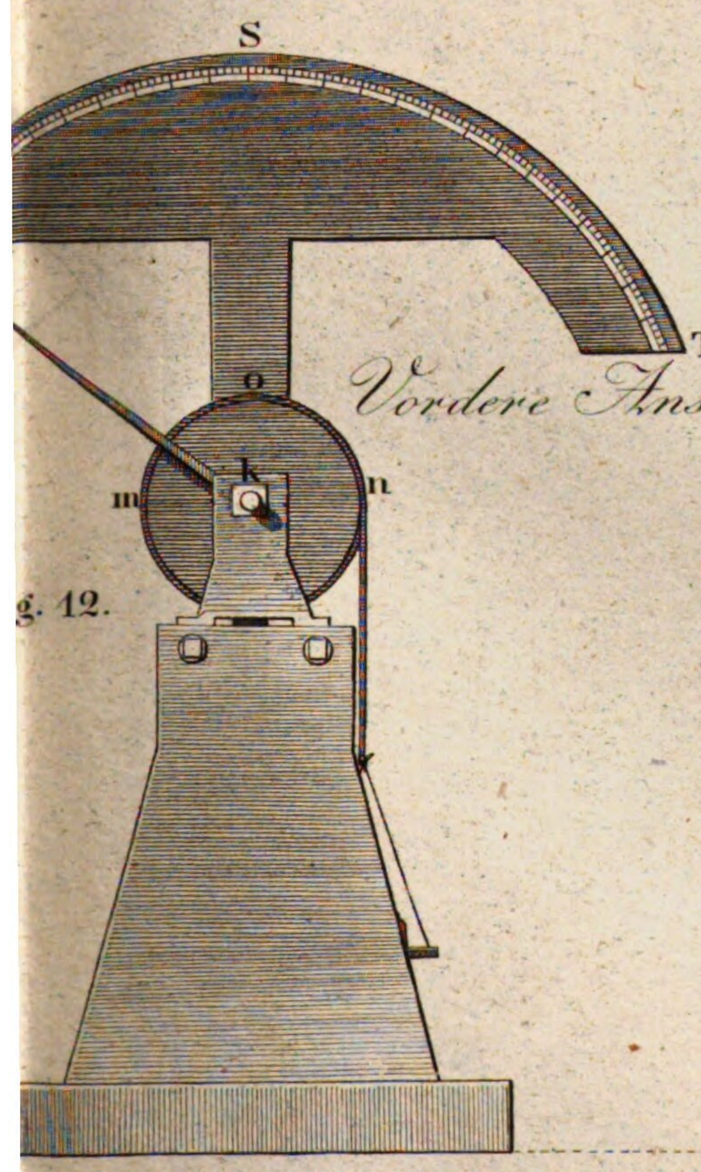

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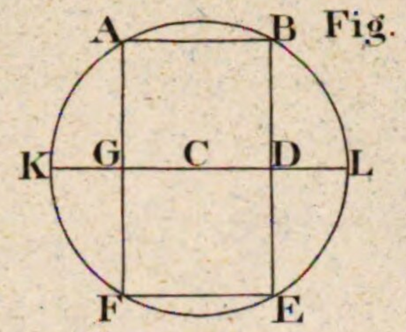
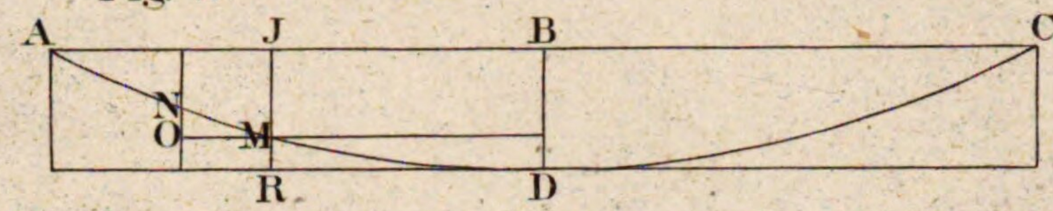


Fig. 5.

Fig. 6.



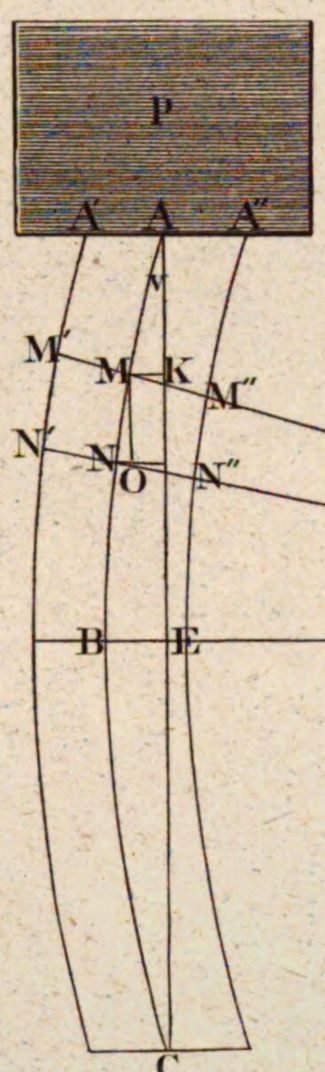


Fig. 7.

Apparat zur Messung der Drehung der Körper.

Vordere Ansicht. *Längenansicht.*

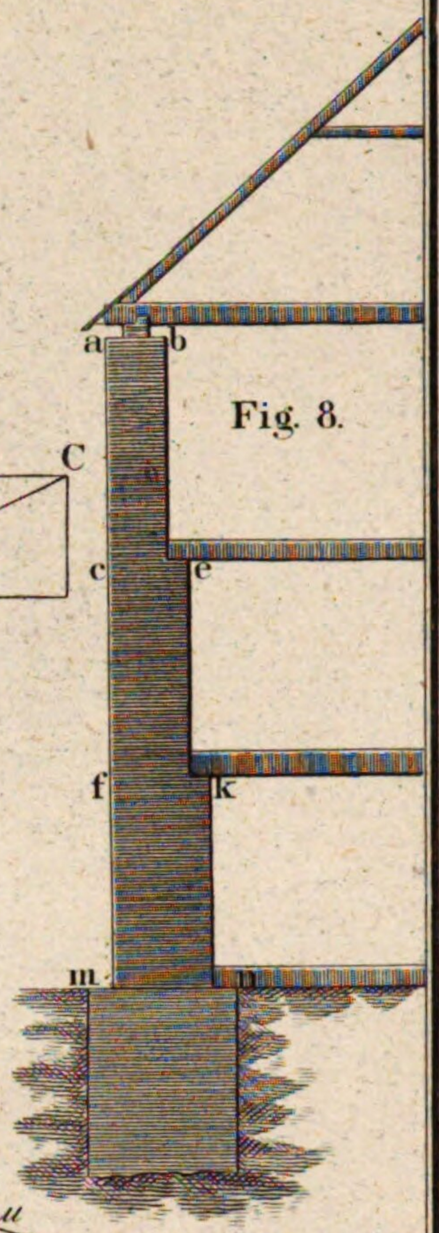


Fig. 8.

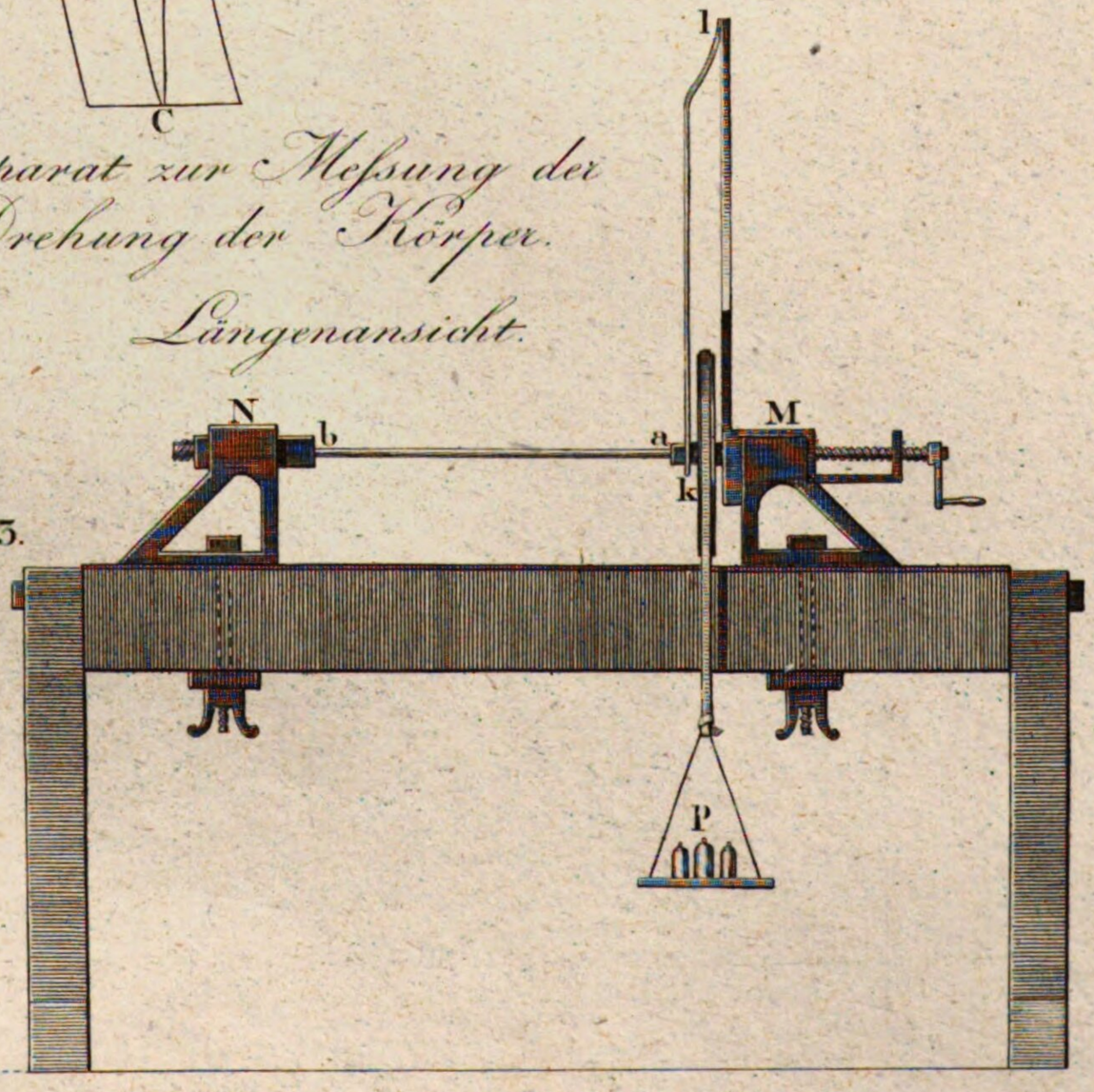
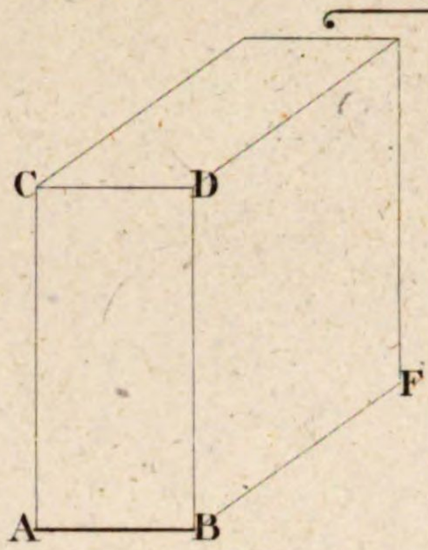


Fig. 13.

K. Berka sc.

Fig. 1.



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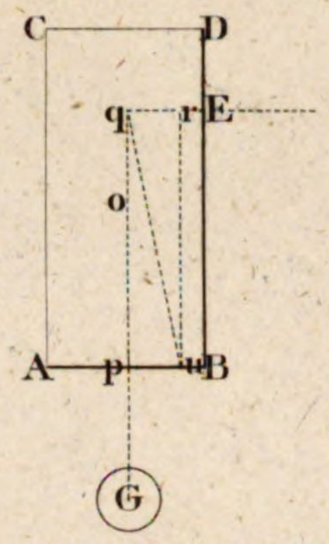

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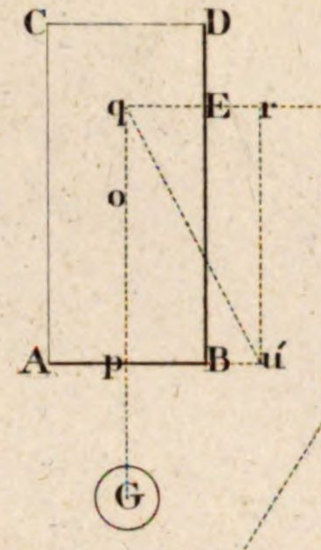

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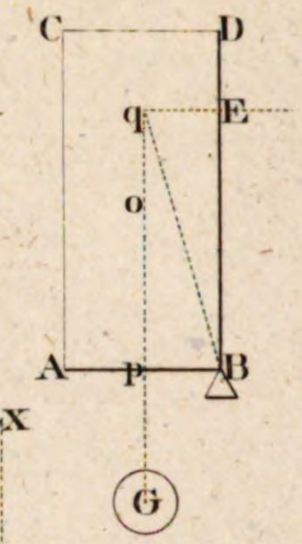

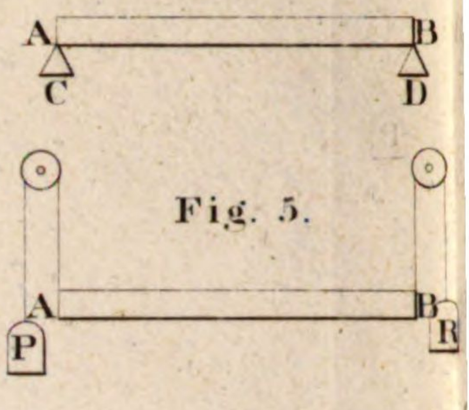

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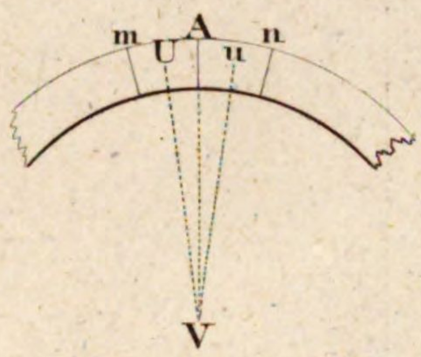

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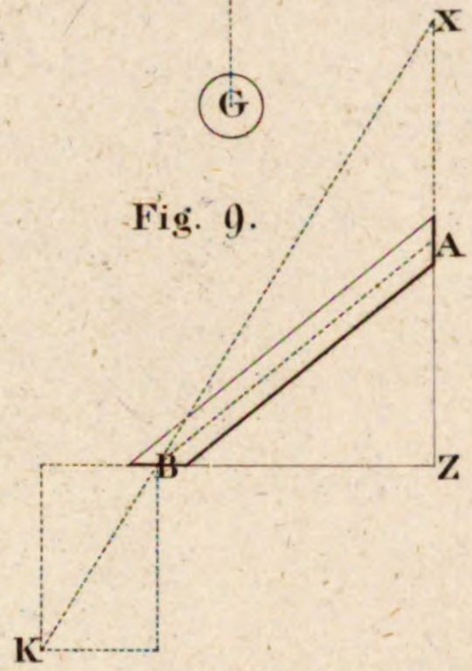

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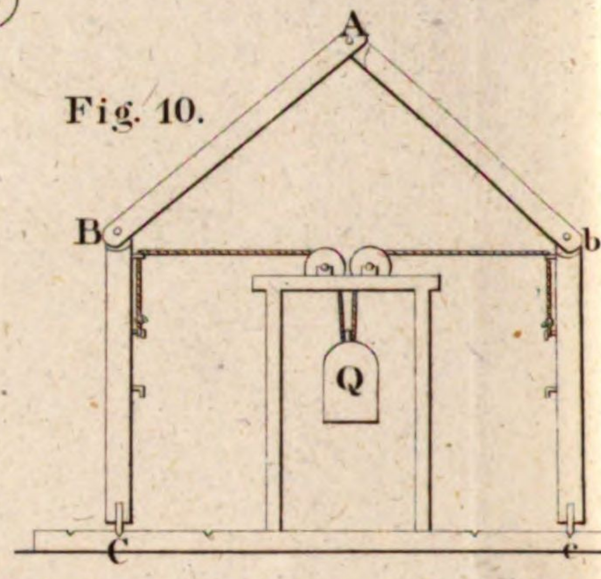

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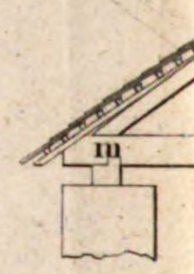

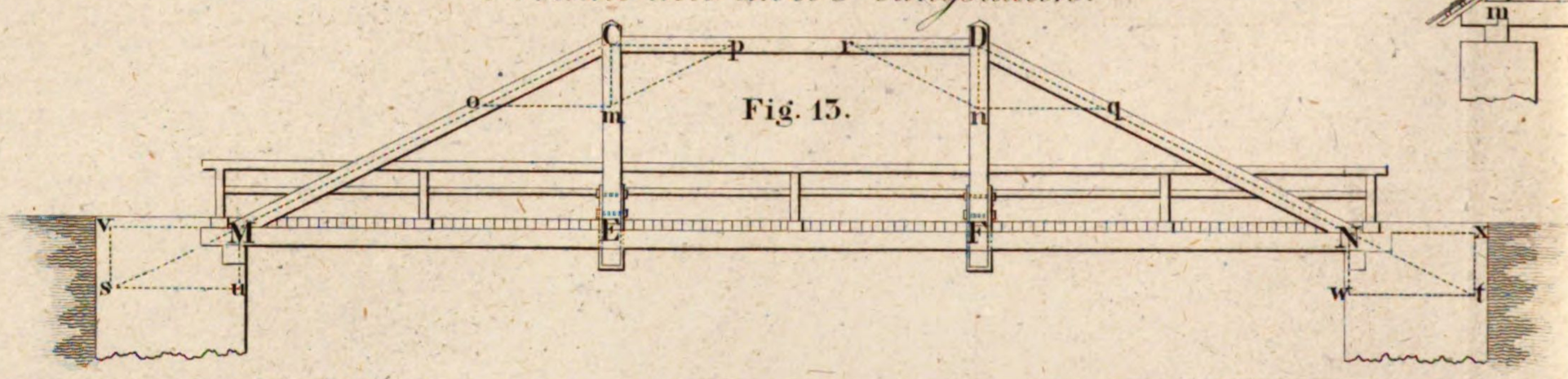

Fig. 13.

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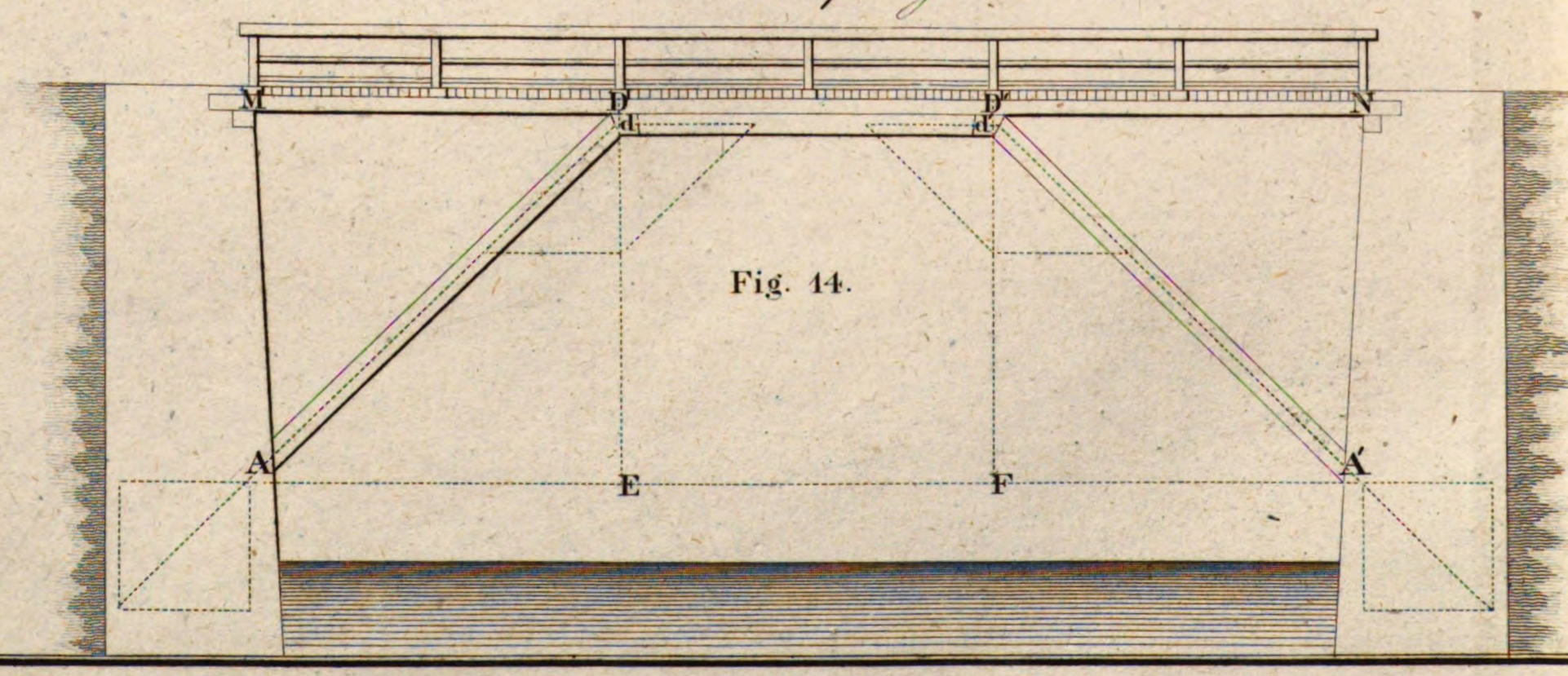

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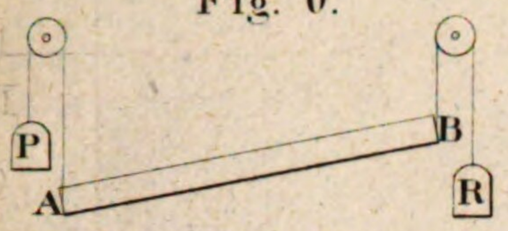

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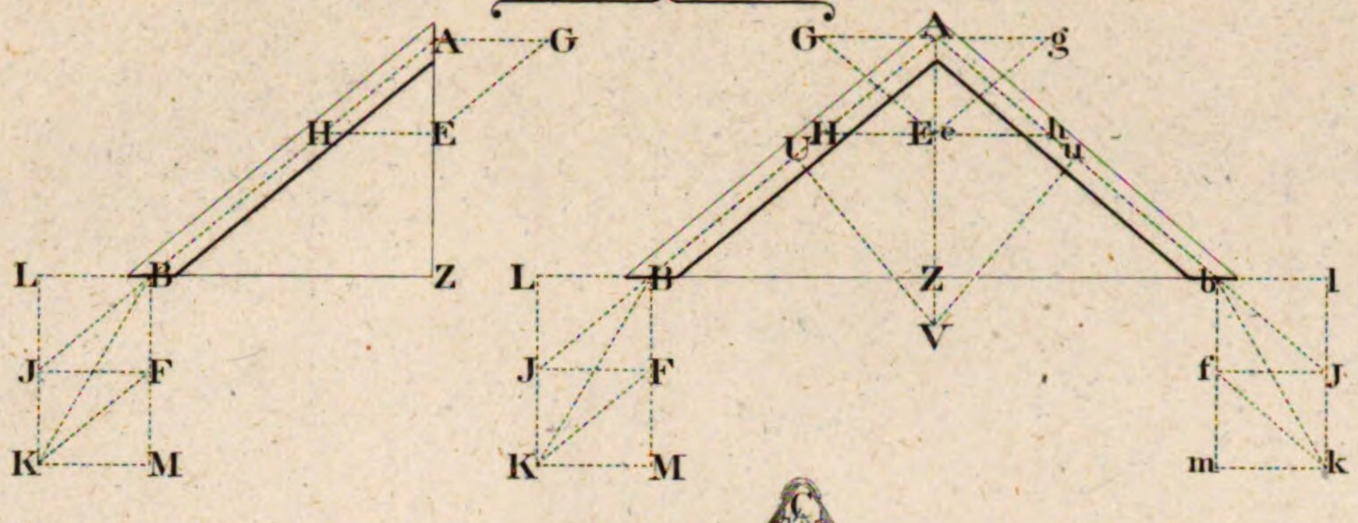

Einfaches Hängwerk.

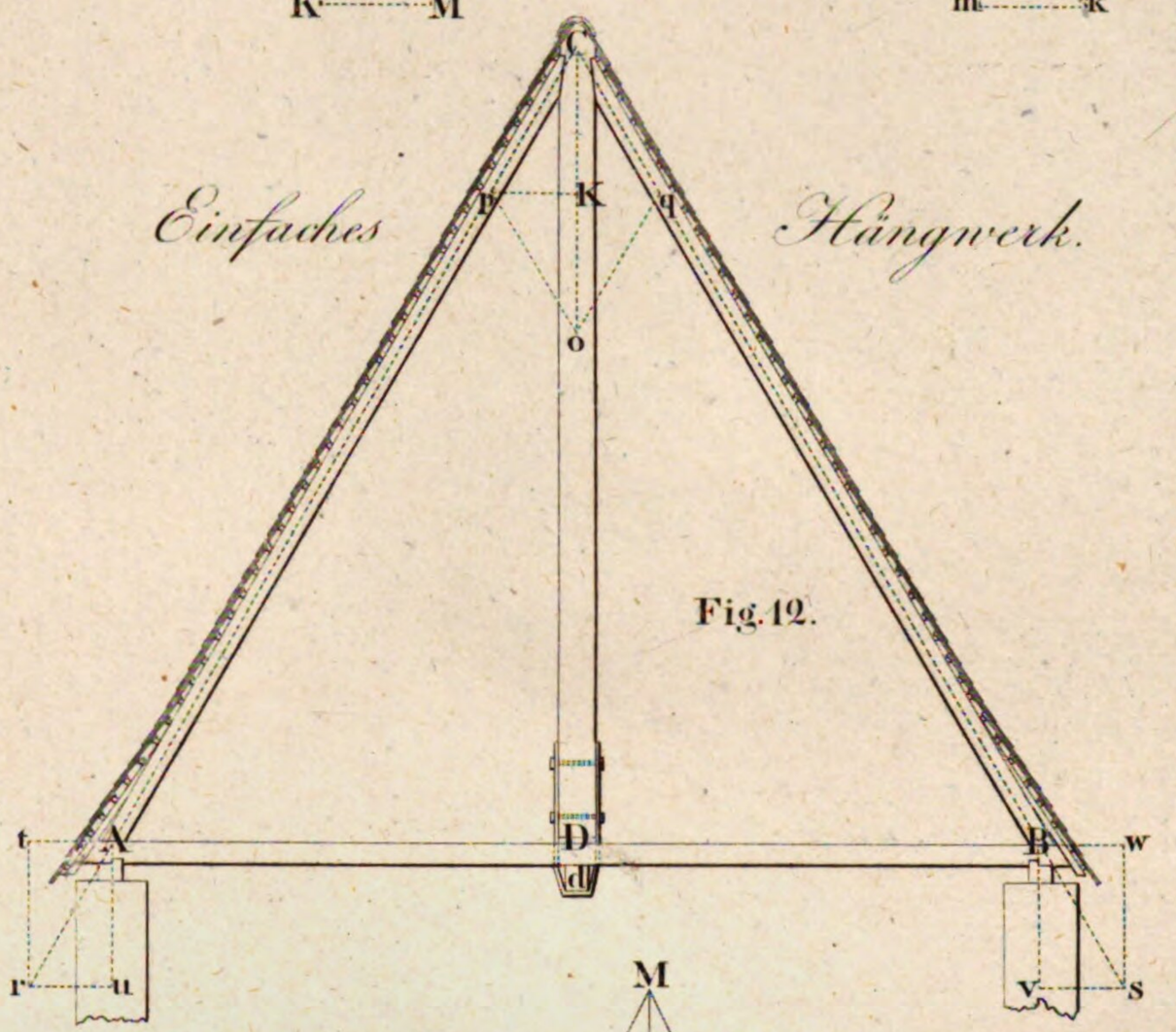

Fig. 12.

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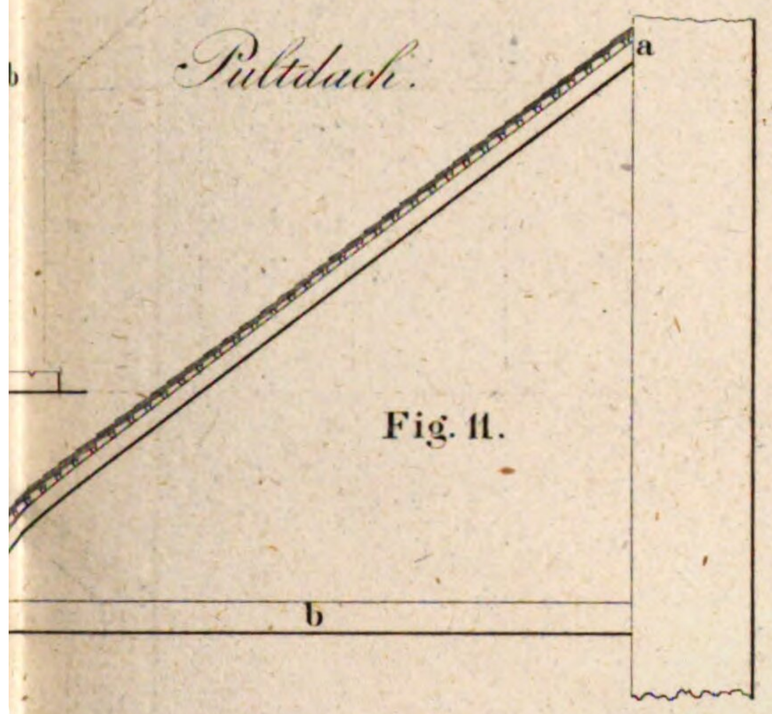

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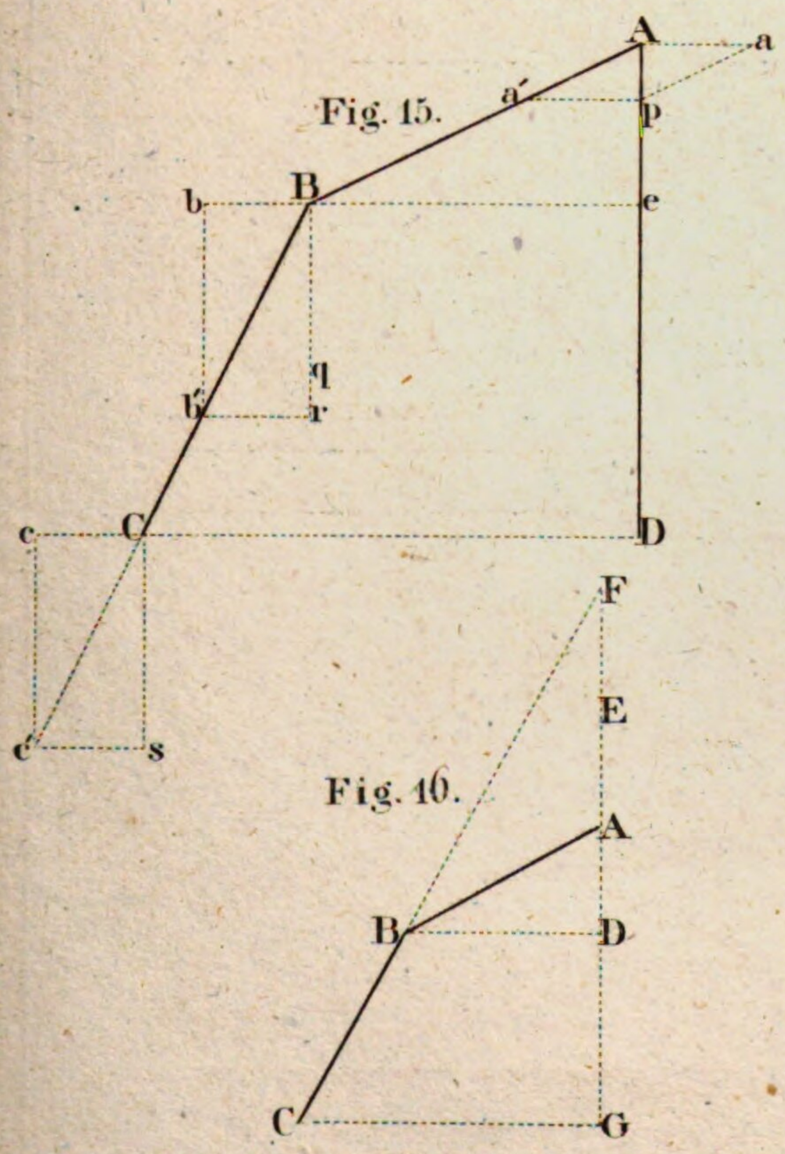
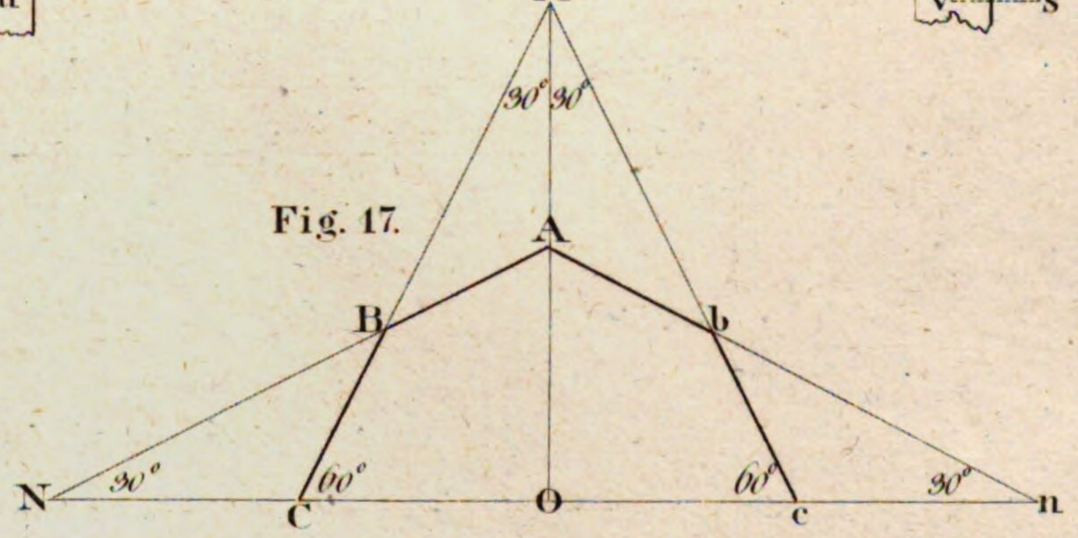


Fig. 15.

Fig. 10.

Fig. 17.



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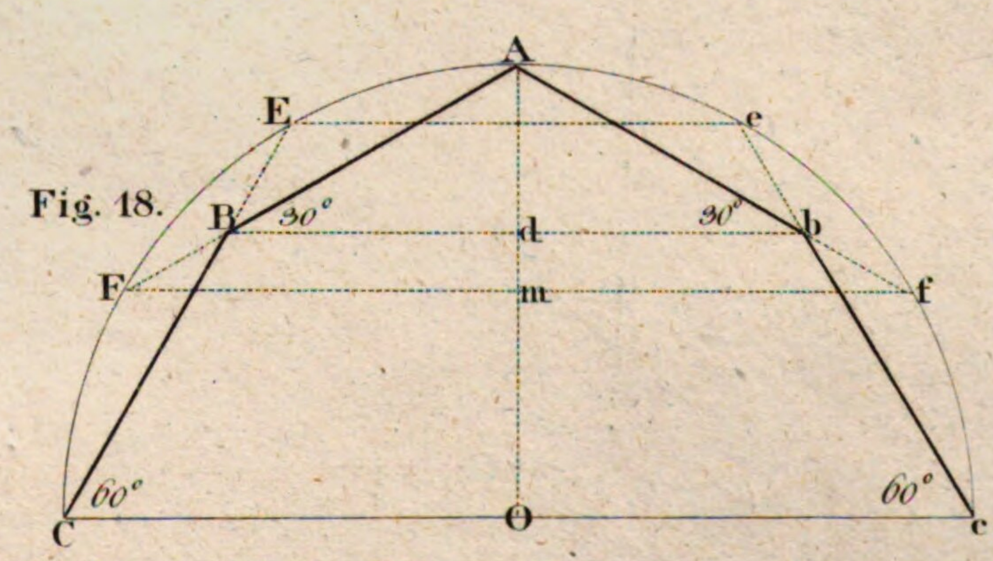

Jos. Skala sc. Prage 1891.

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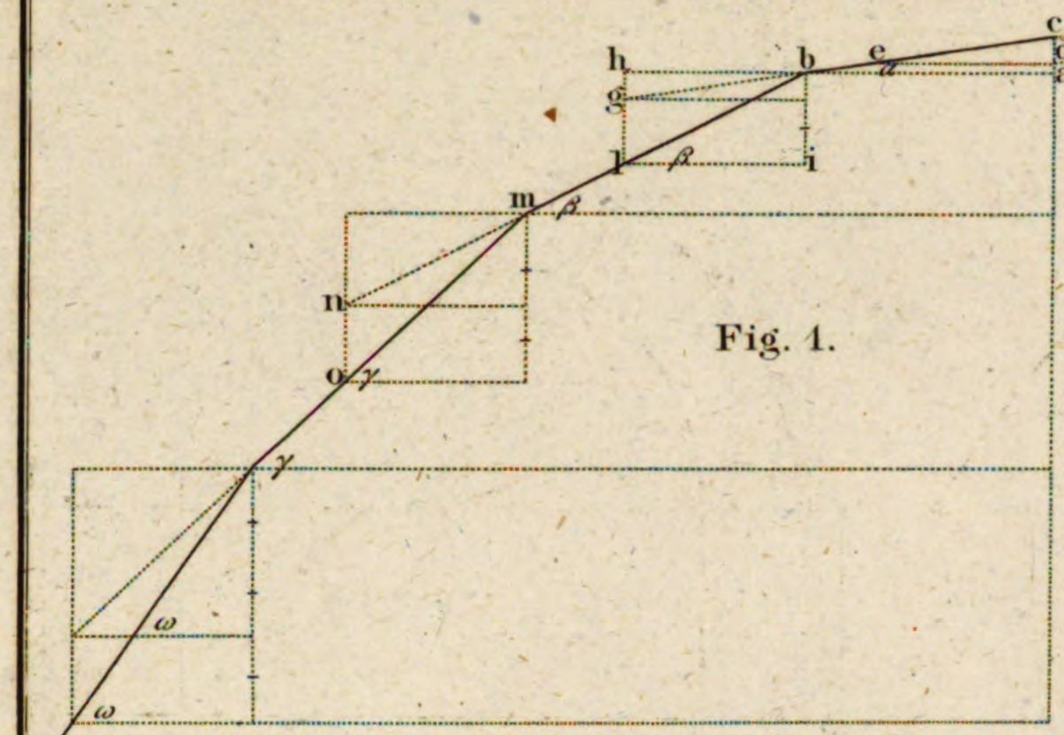

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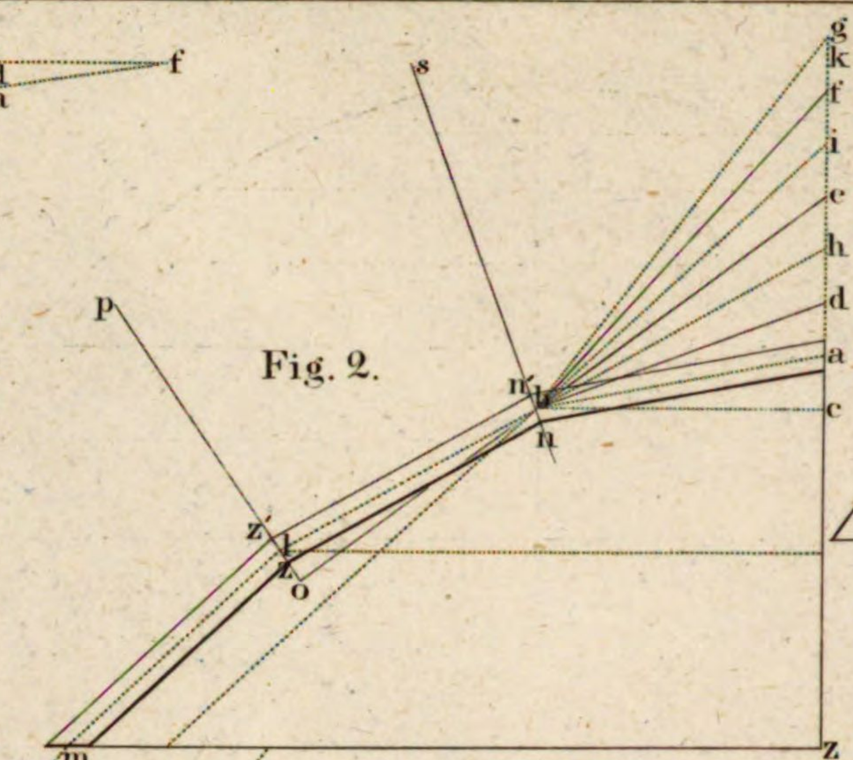

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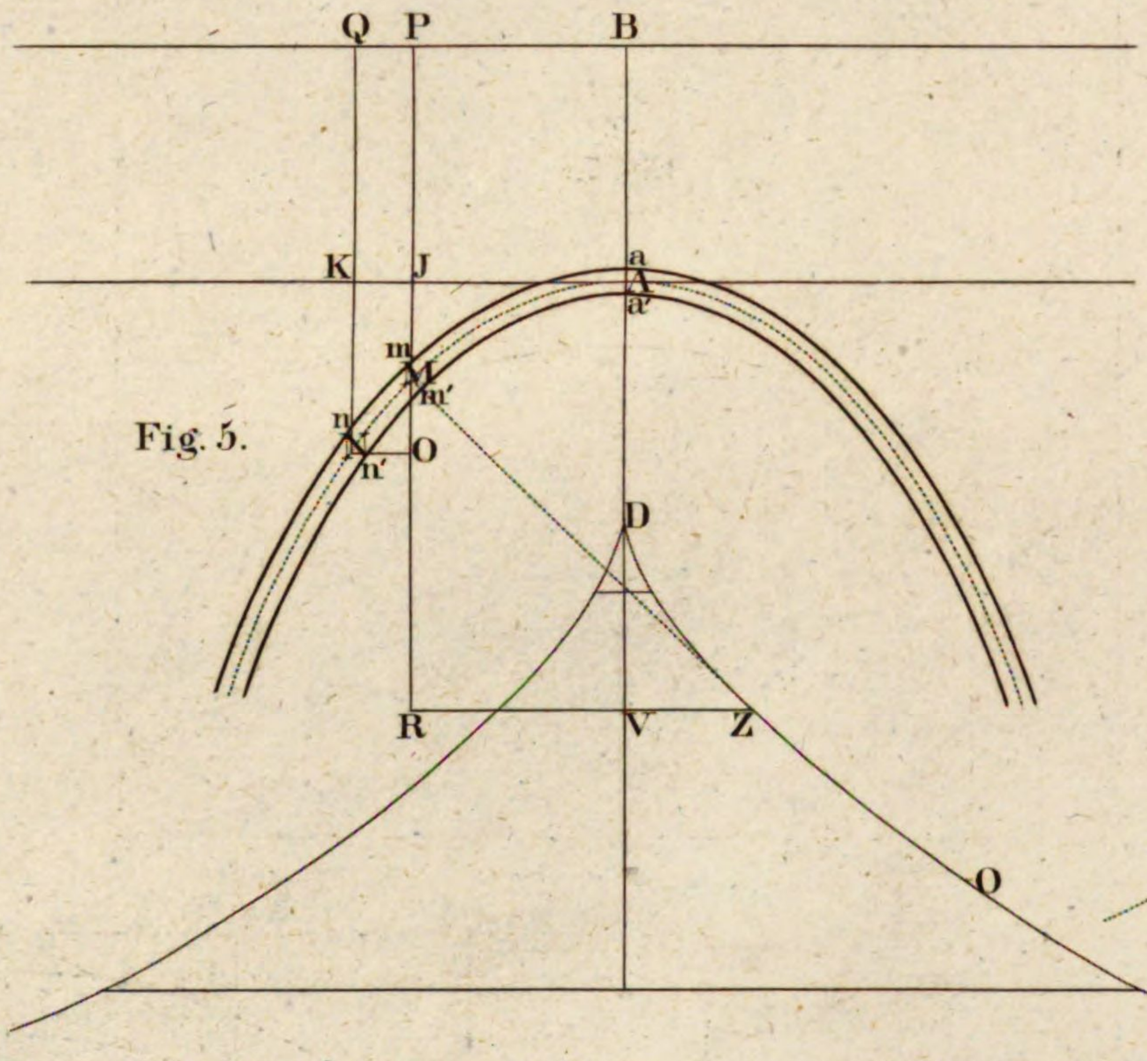

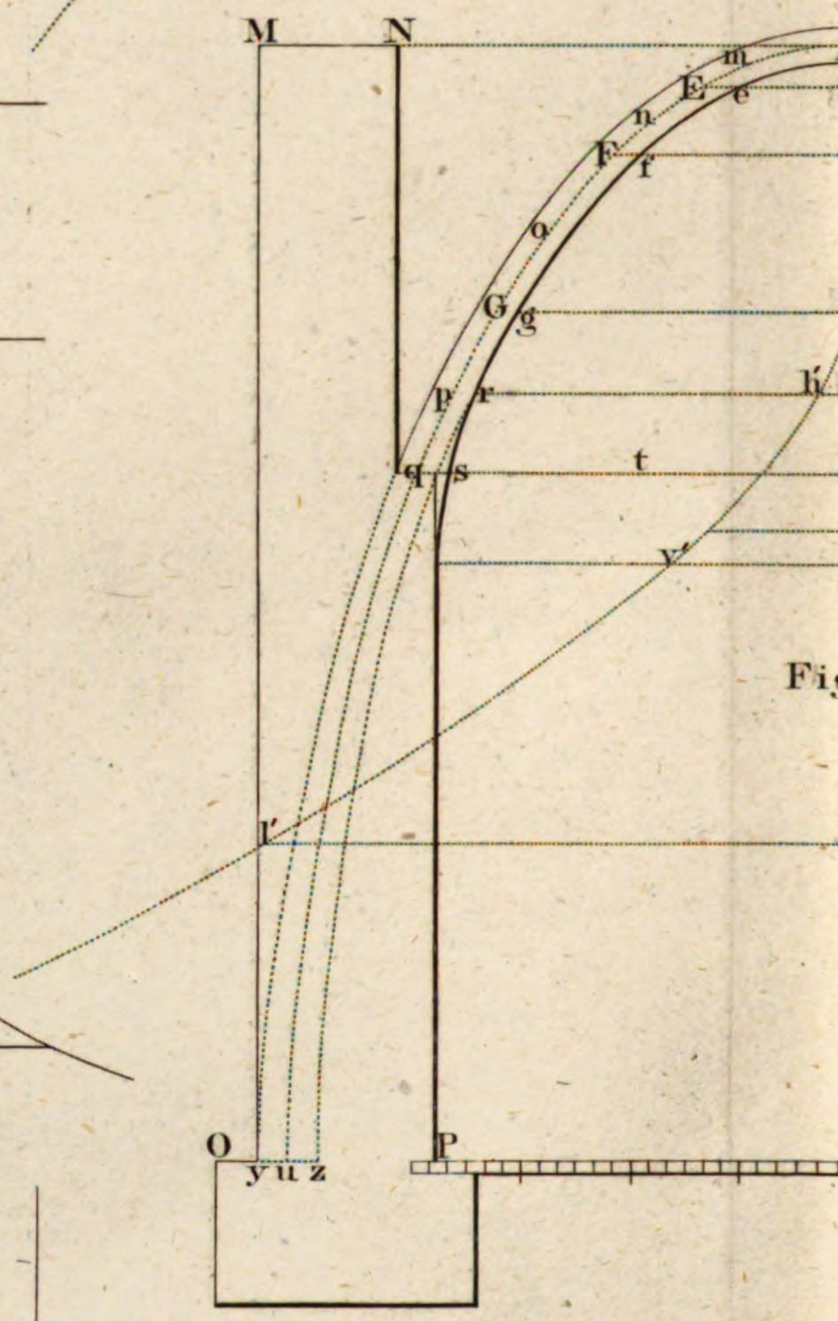

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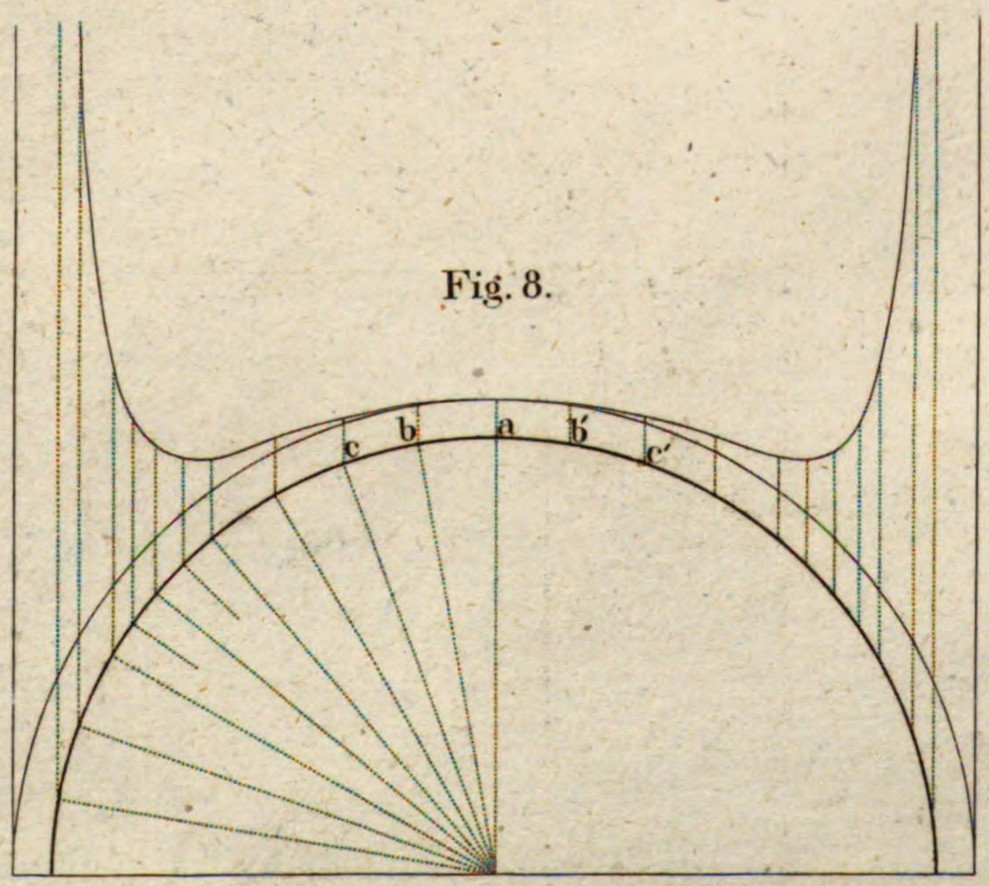

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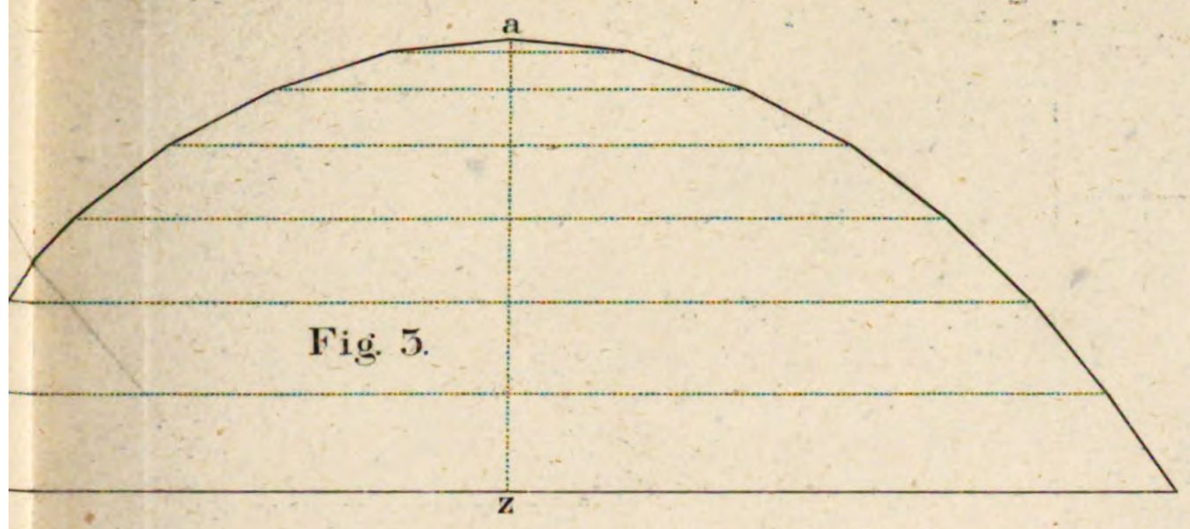

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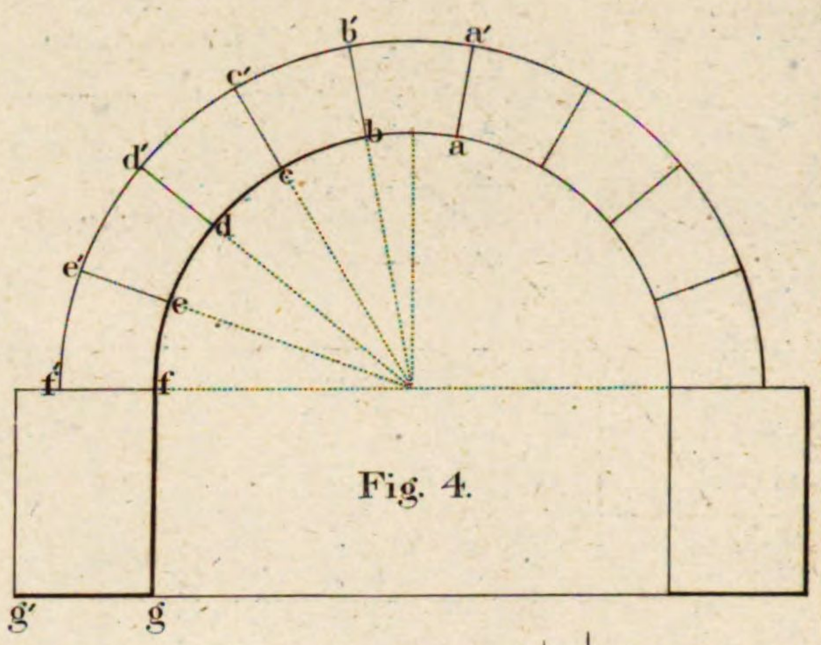

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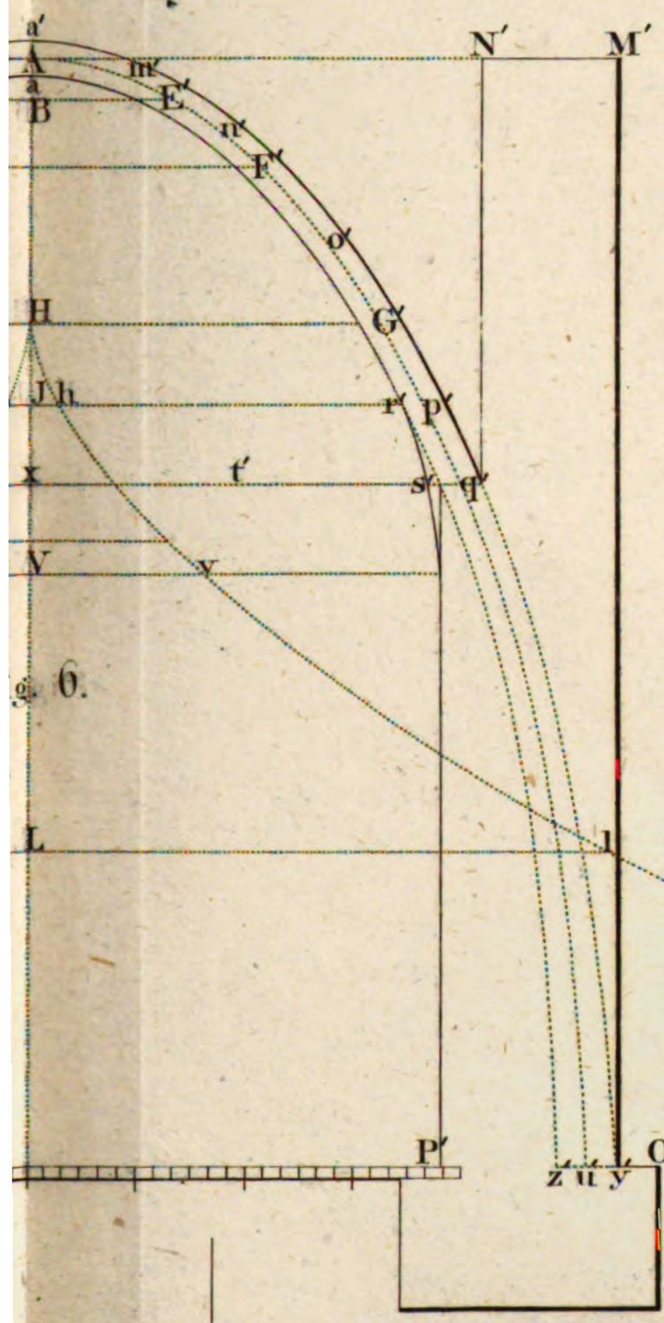

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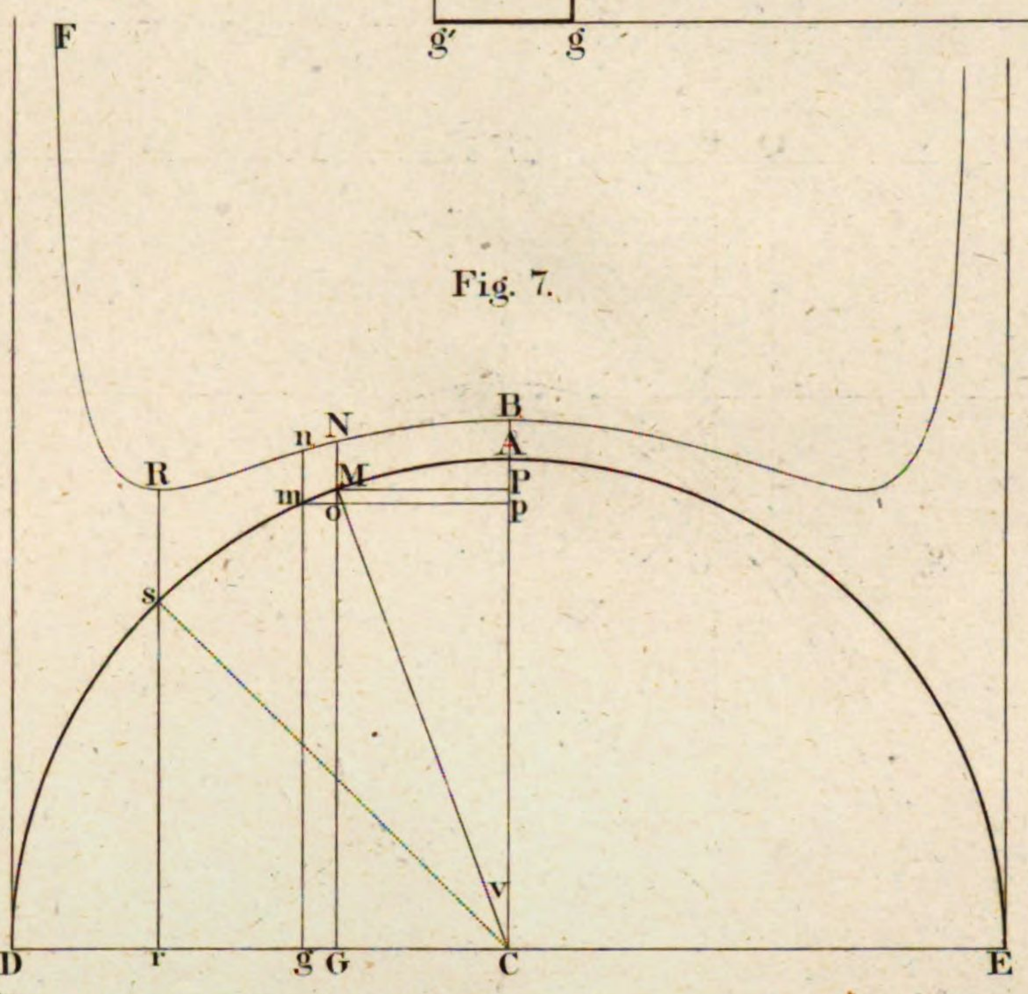

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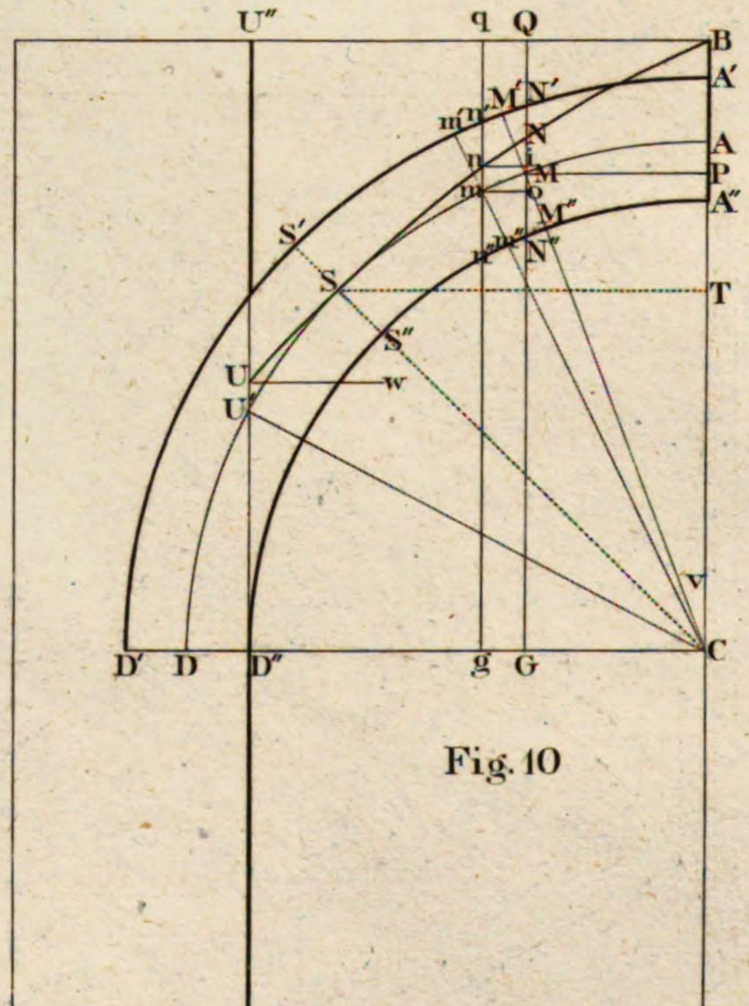

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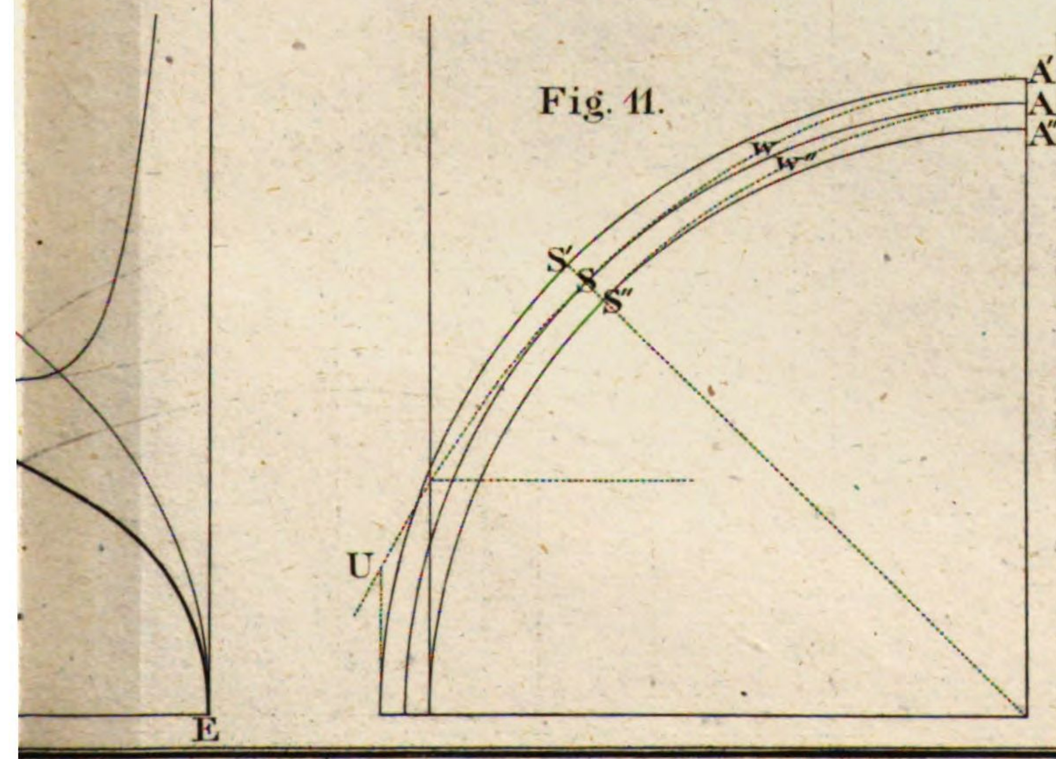

Fig. 11.

Jos. Skala sc. Pragæ 1851.

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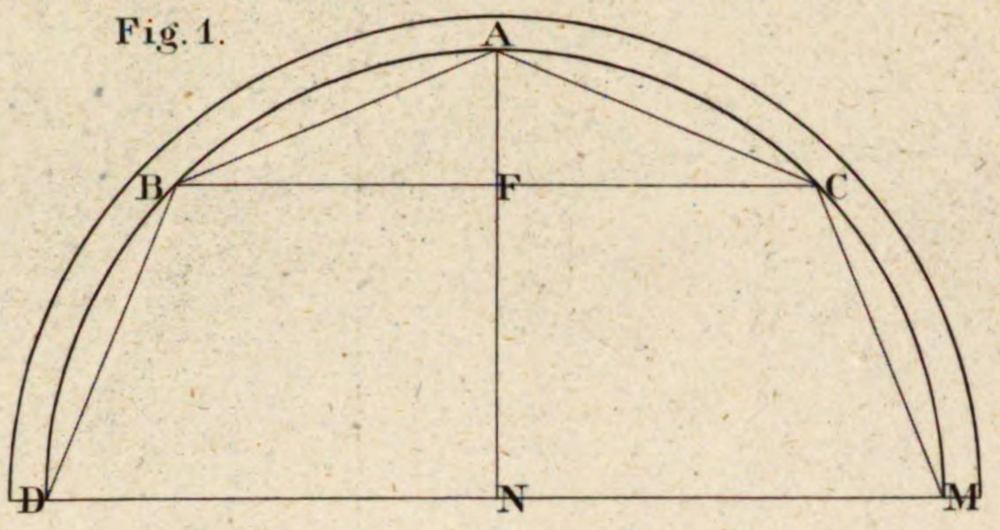

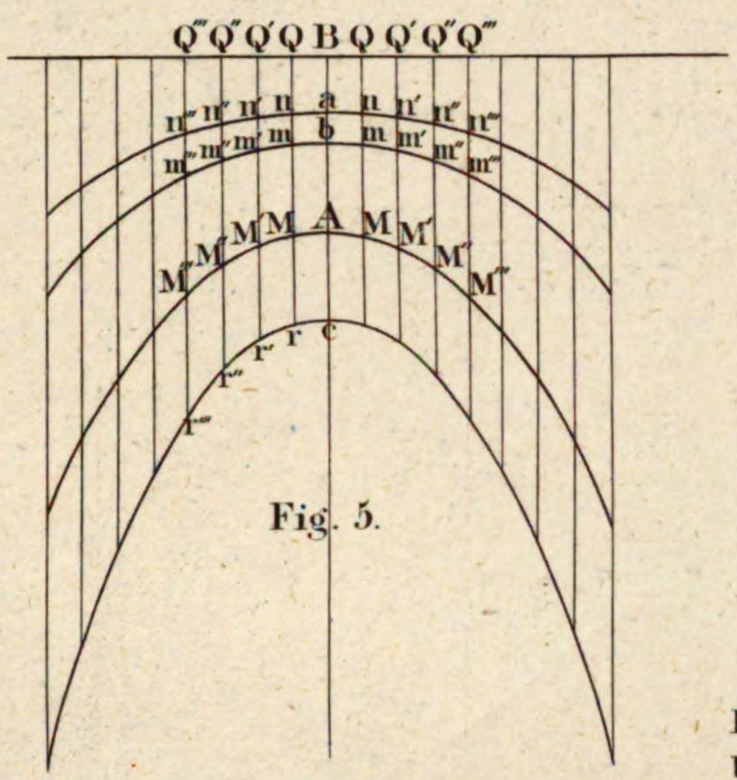

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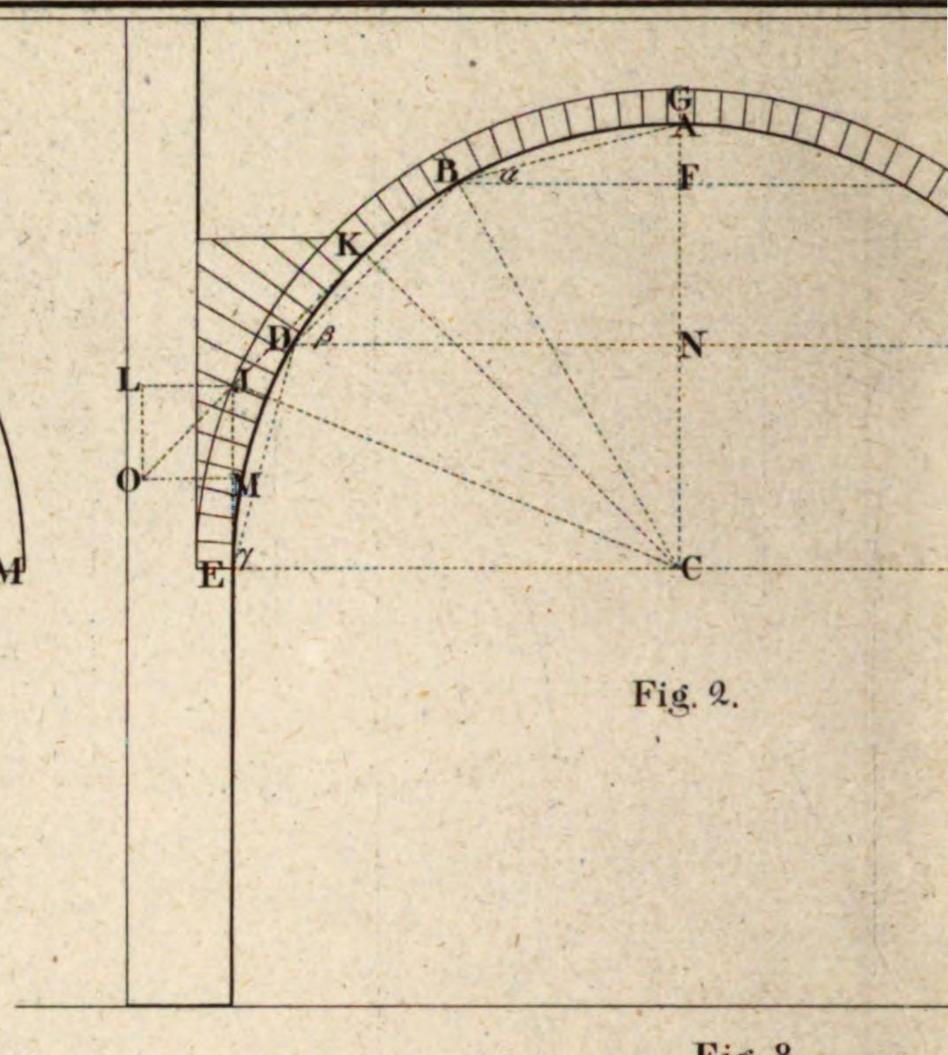

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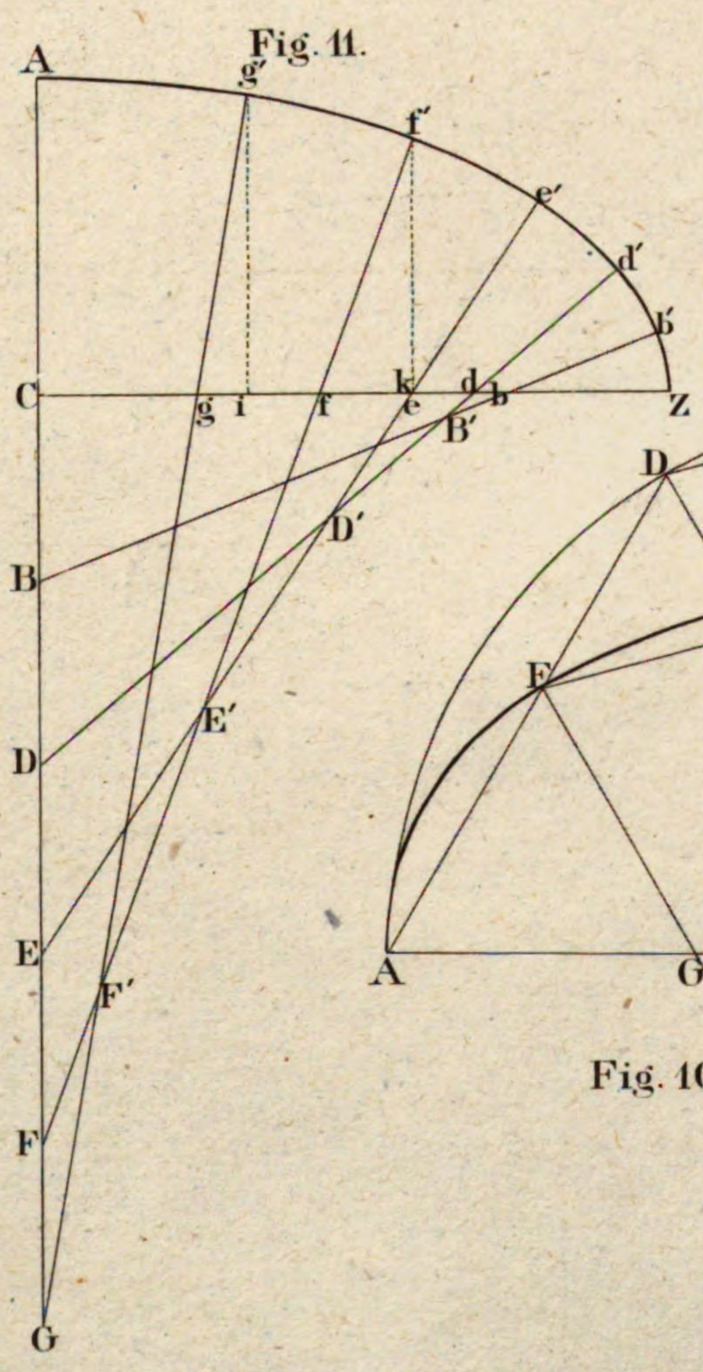

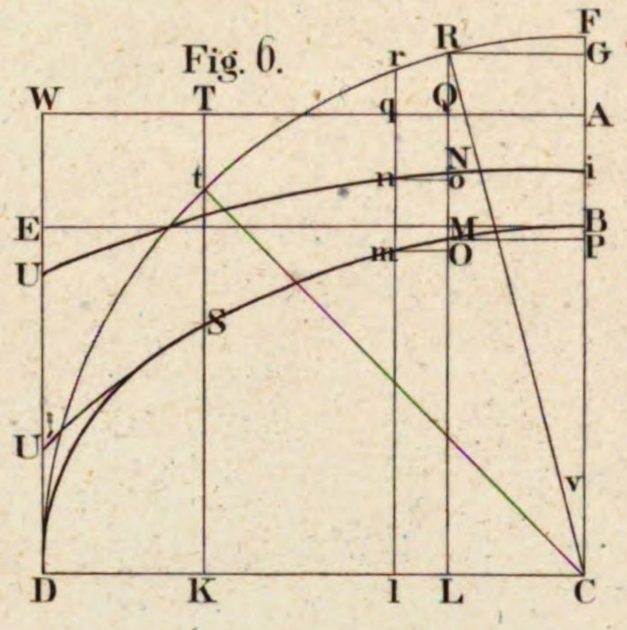

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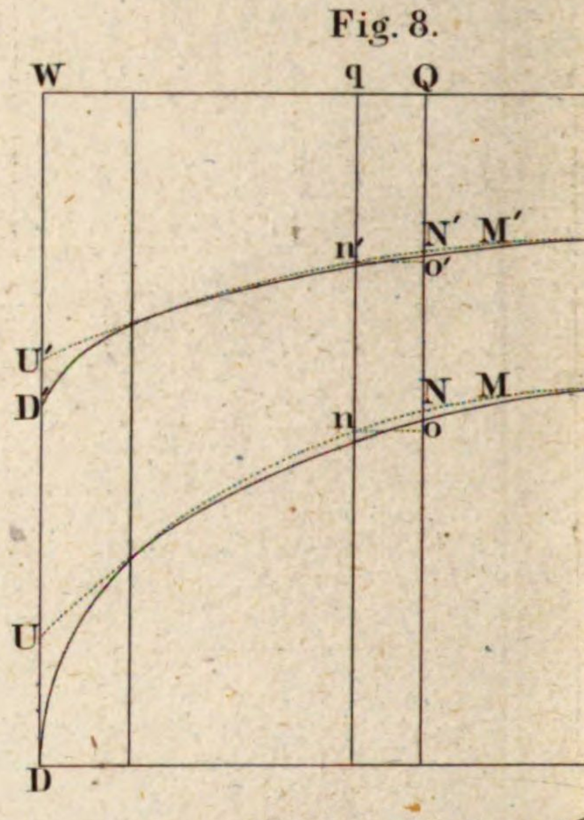

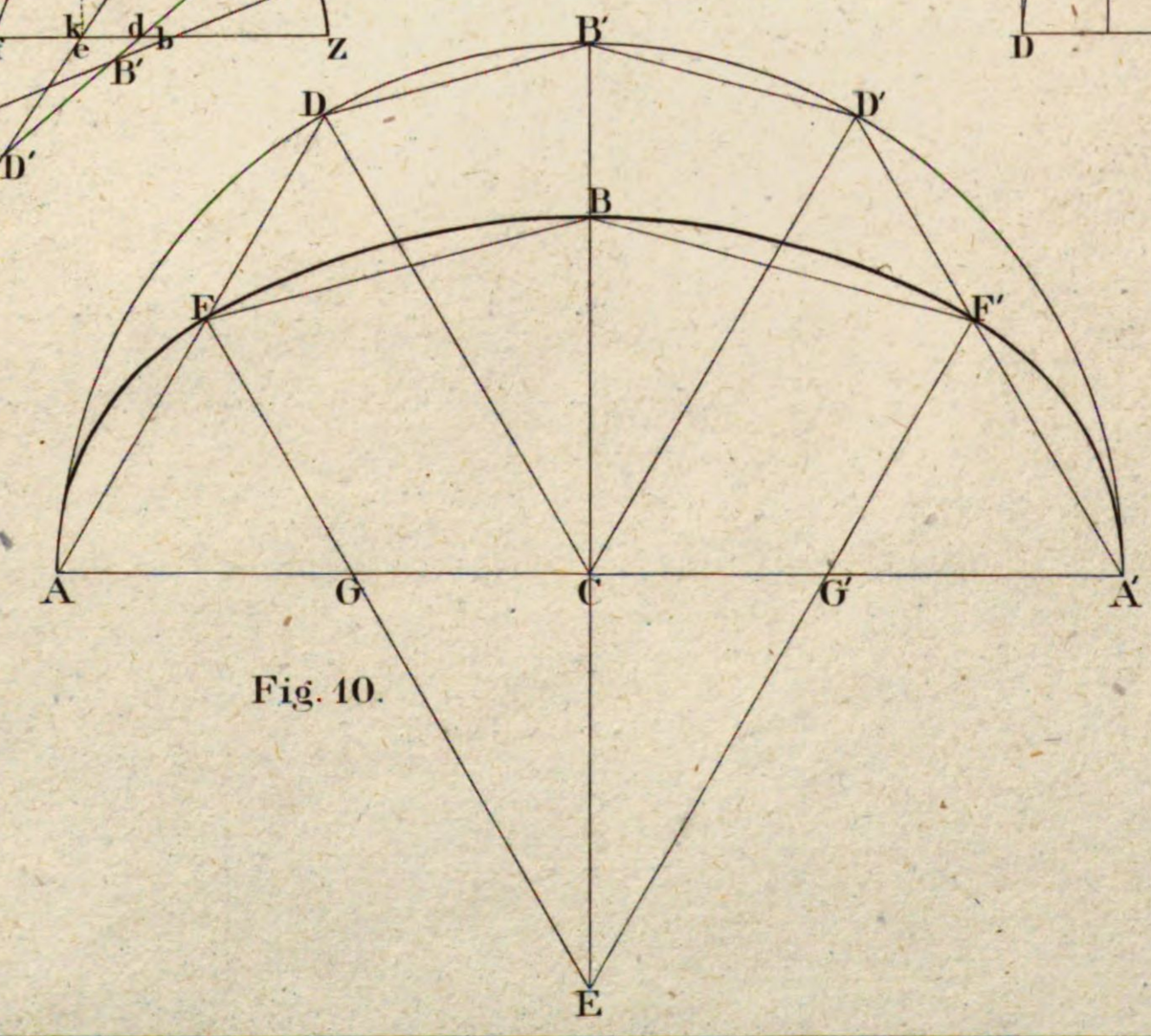

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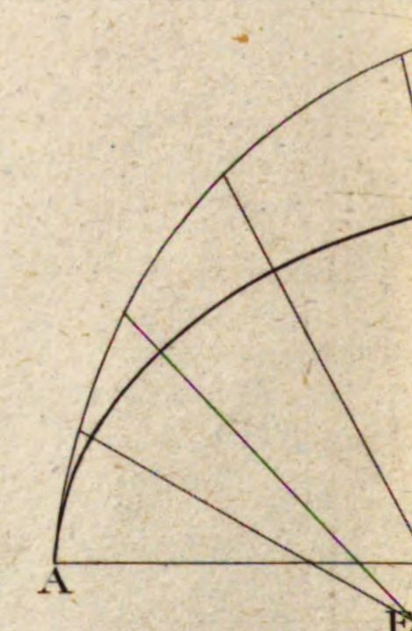

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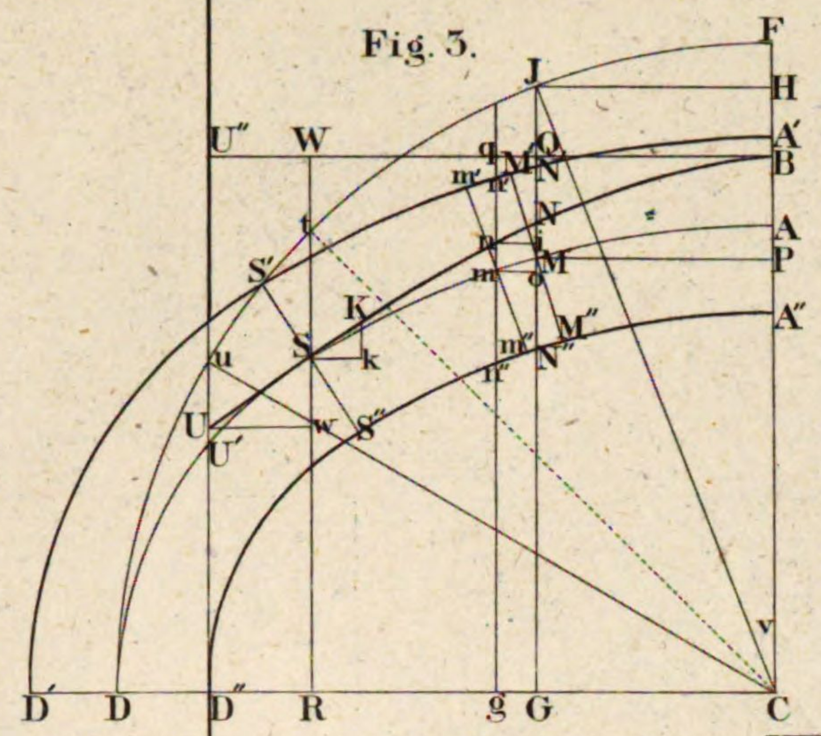
Fig. 3.



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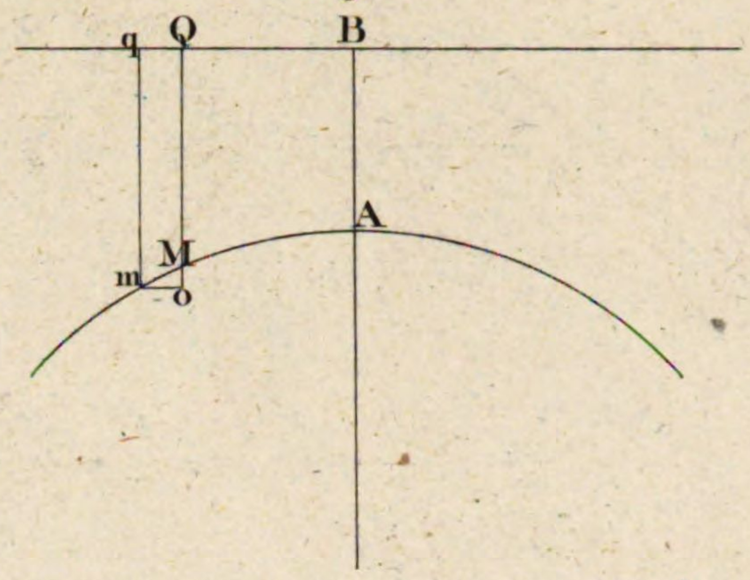

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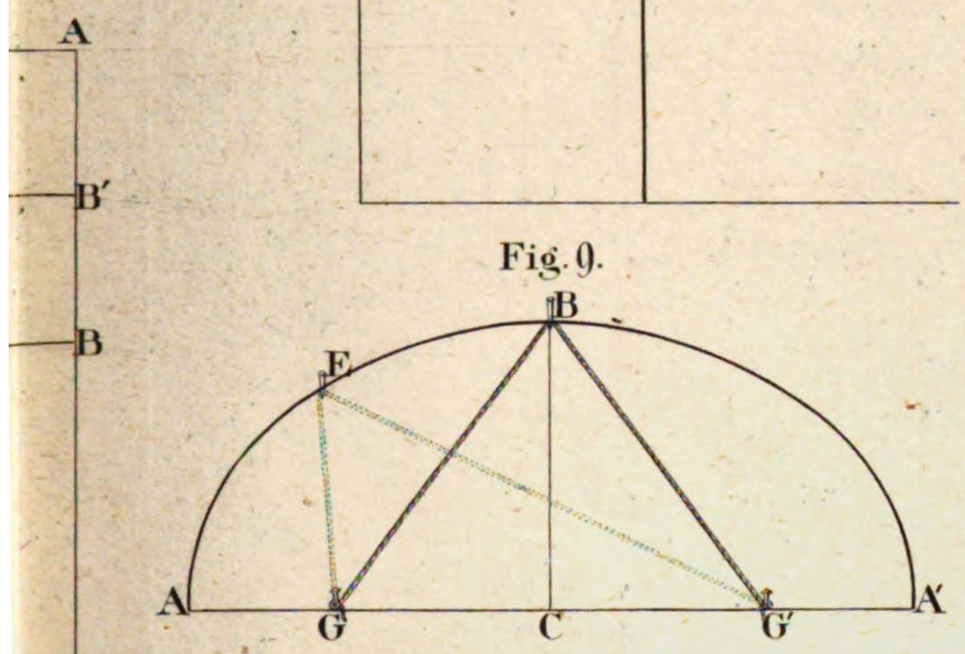

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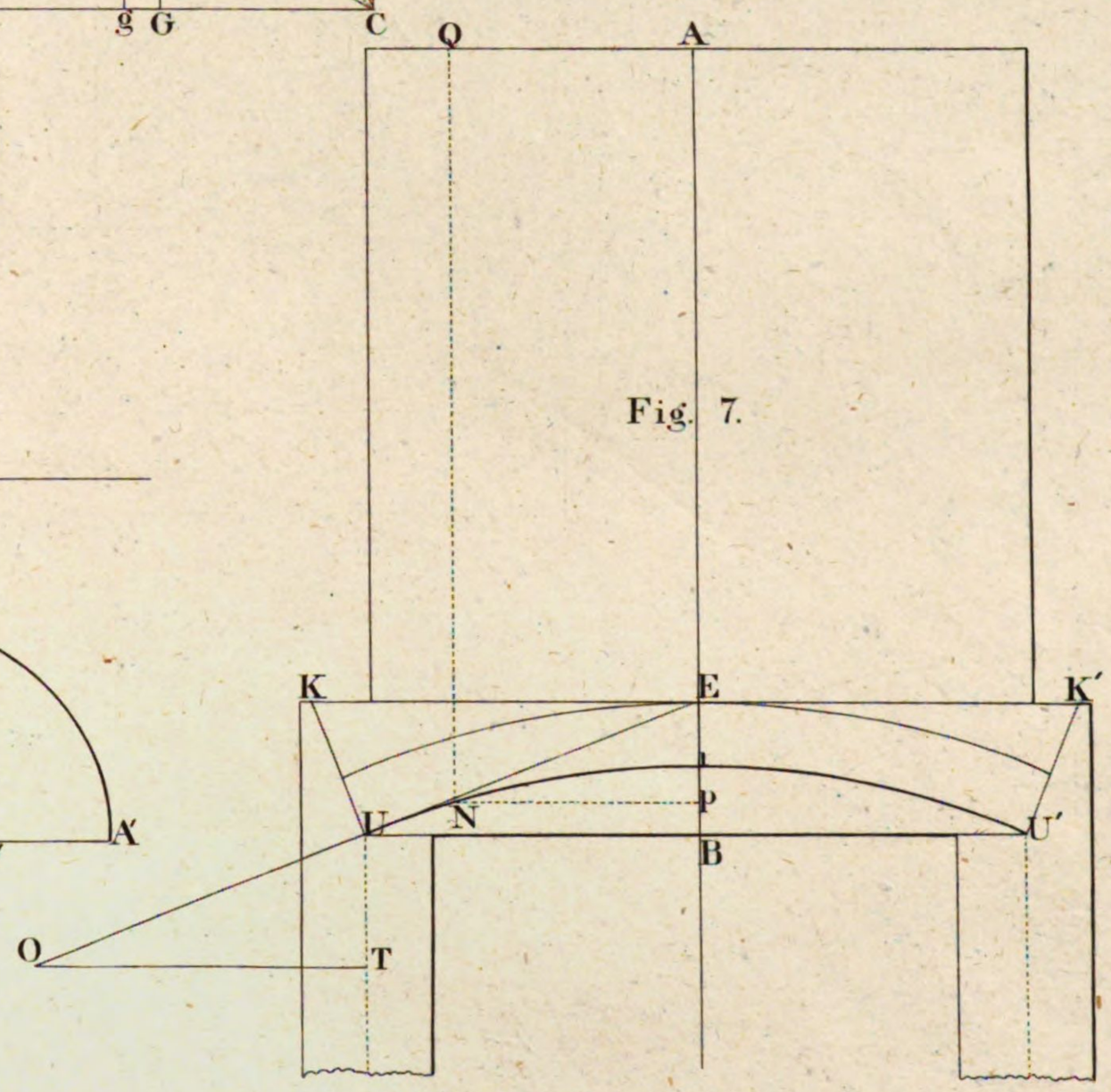

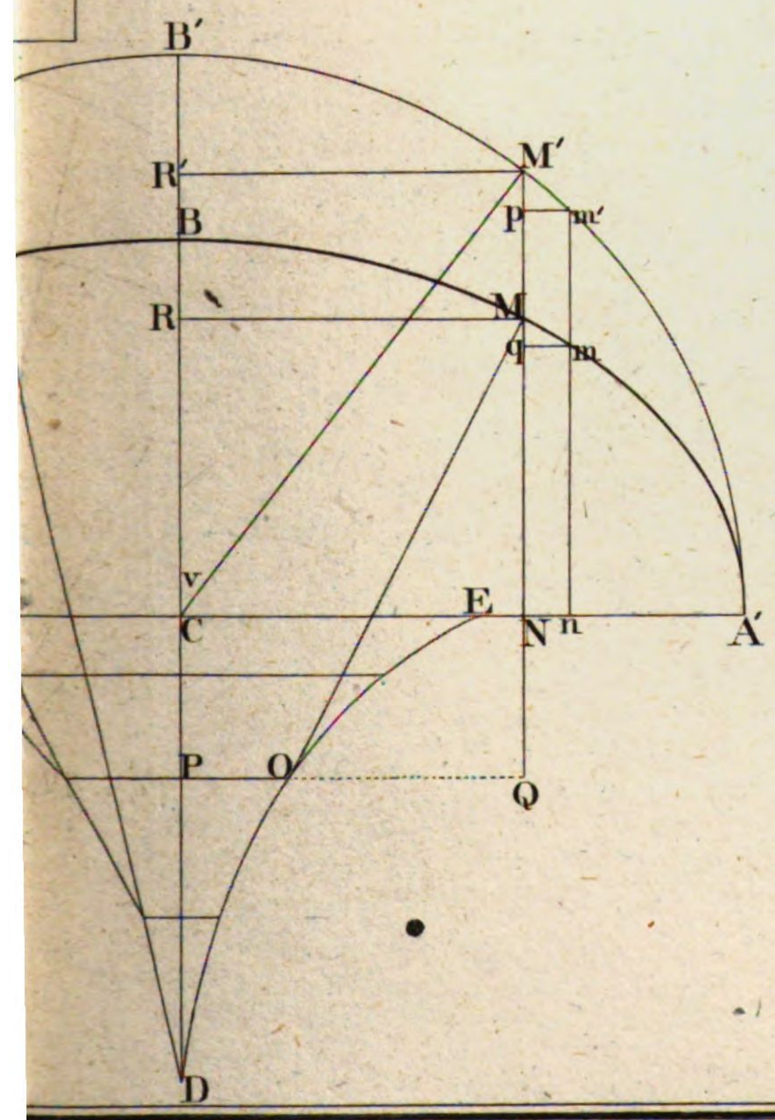

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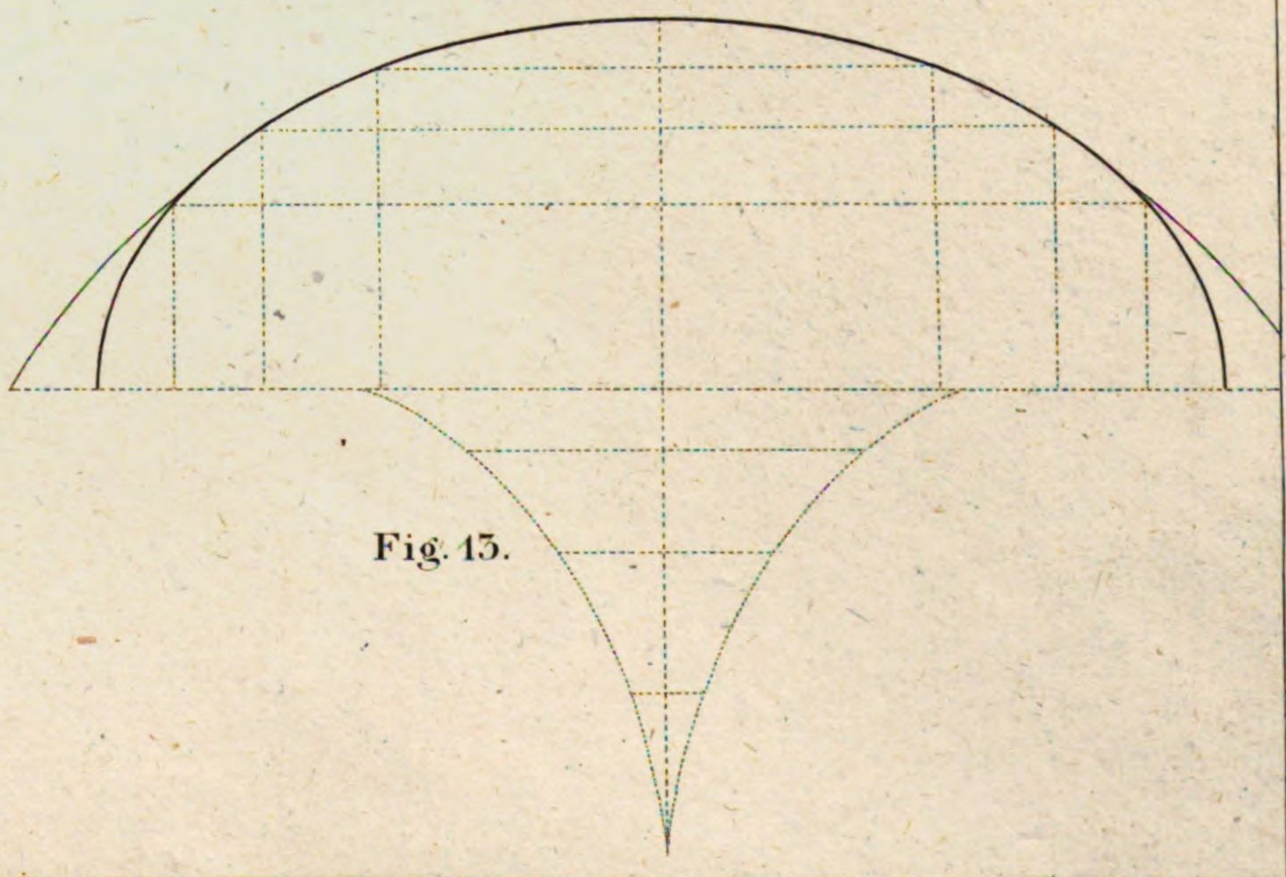

W. Zelisko sc. Praga 1891.

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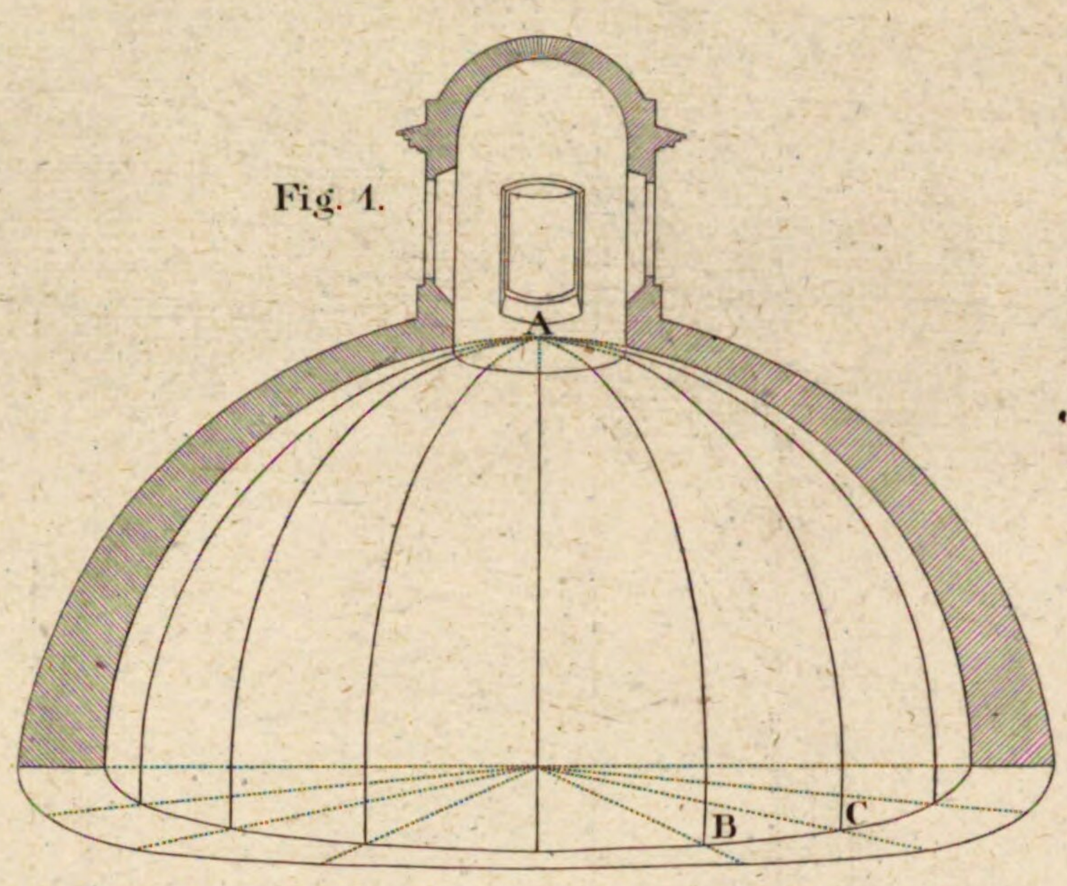

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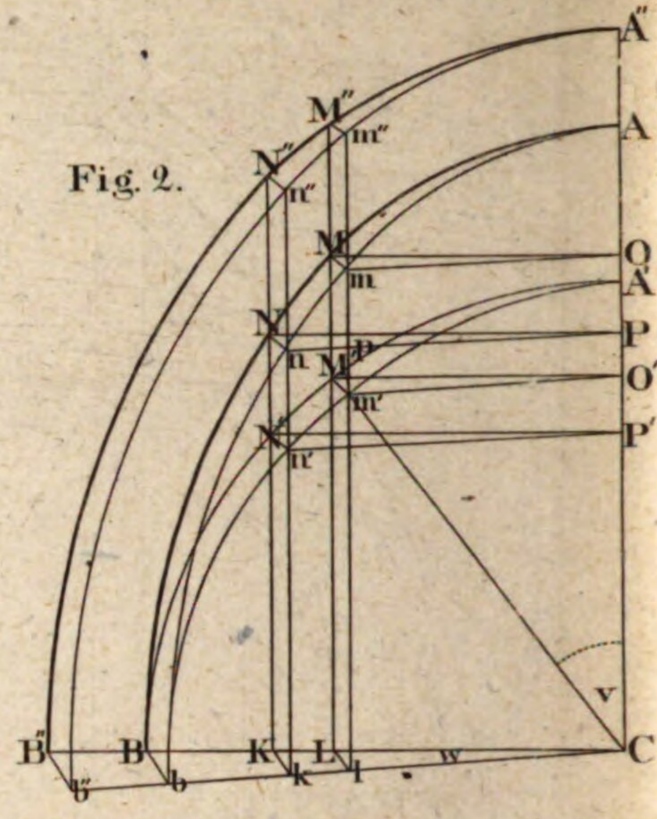

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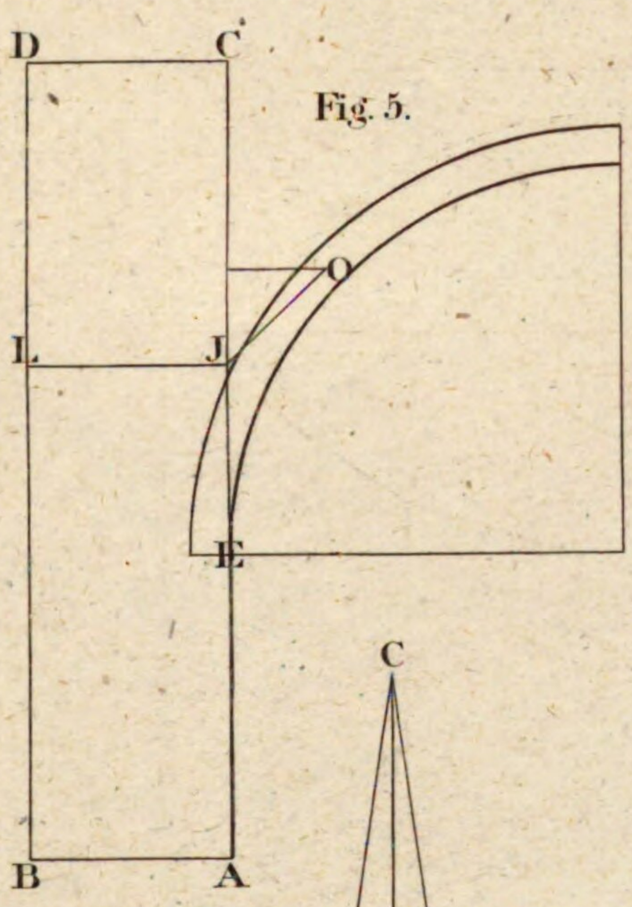

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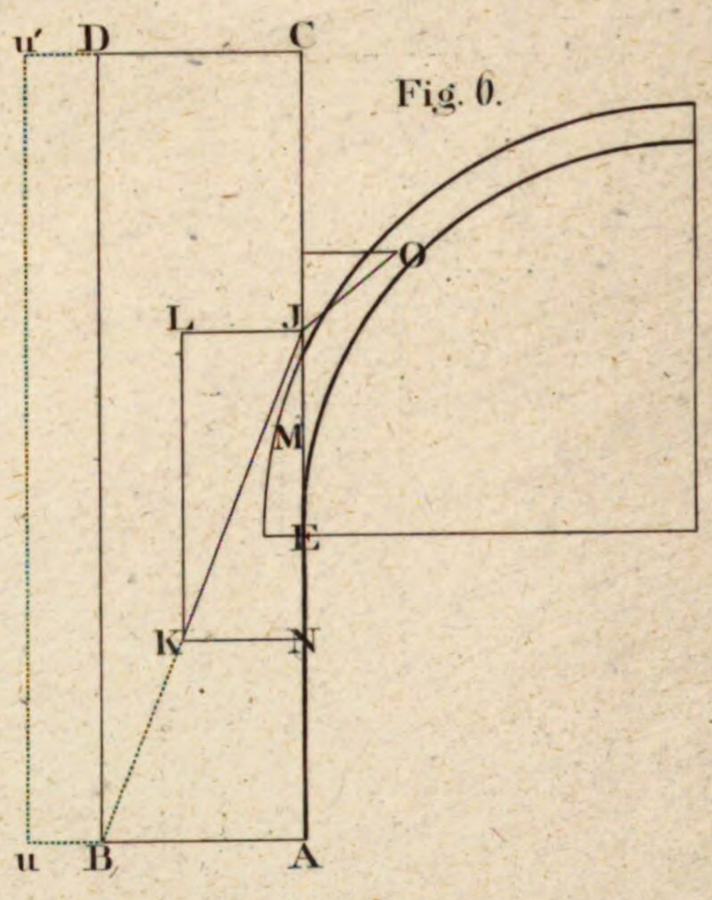

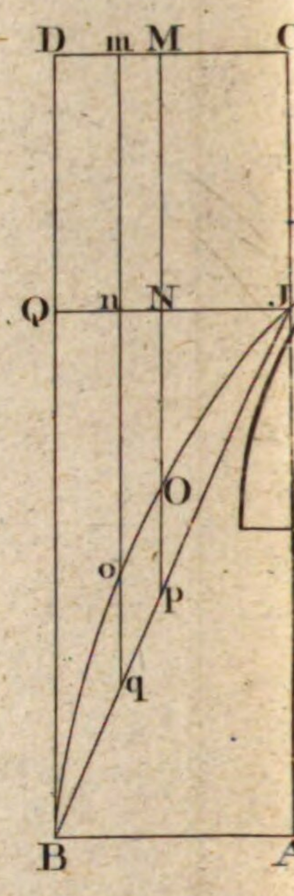

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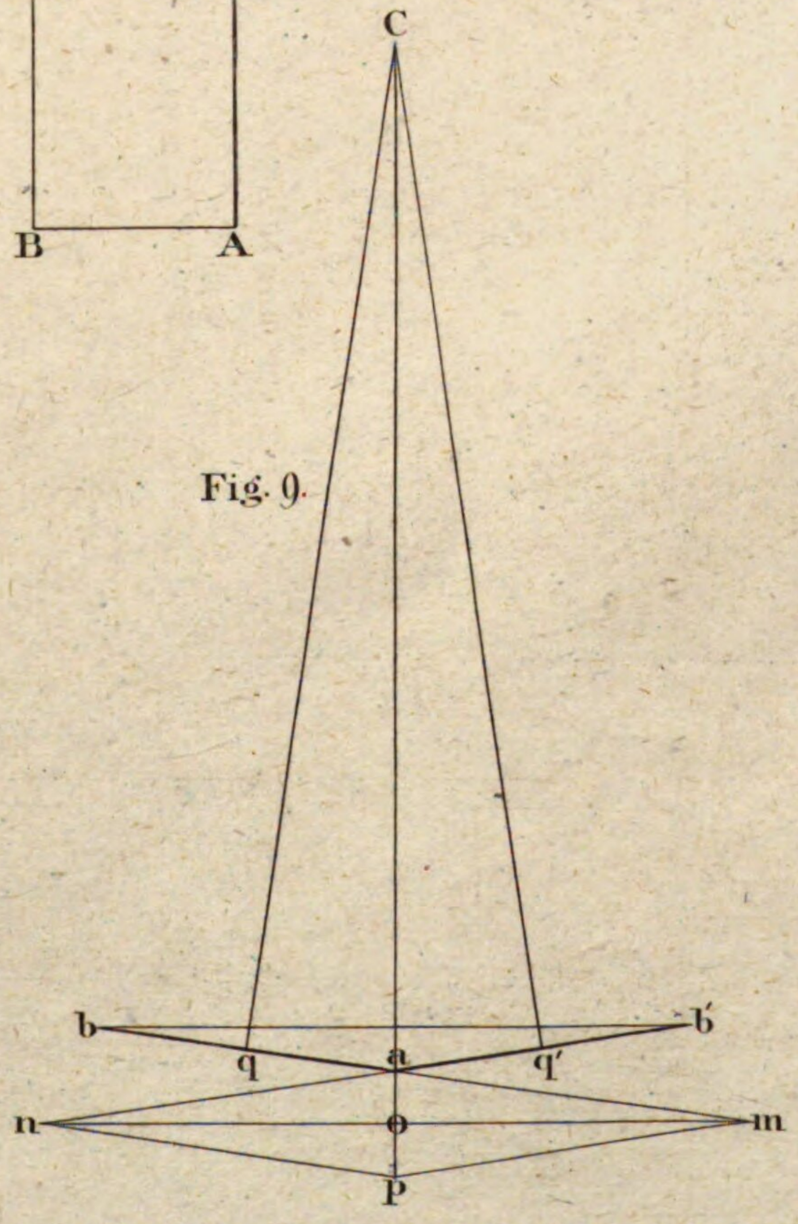

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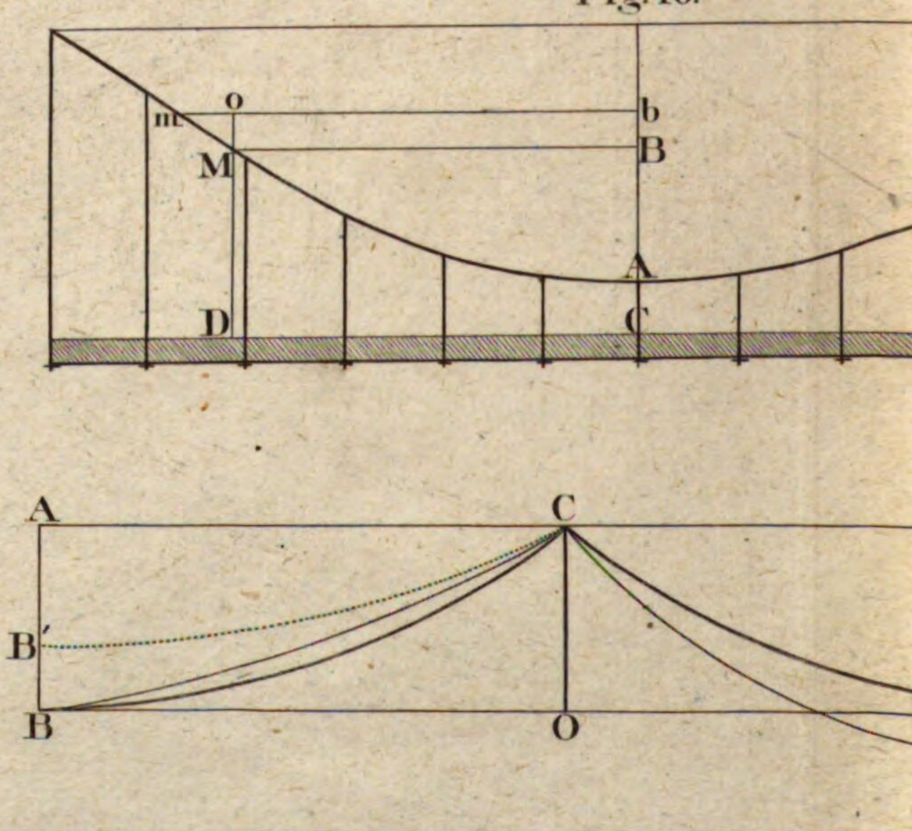

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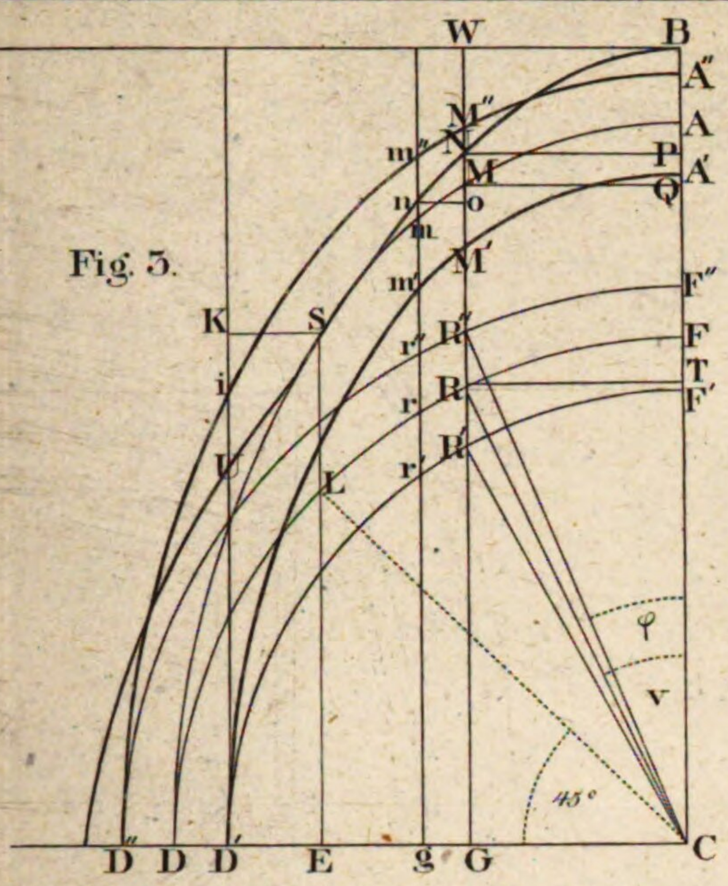

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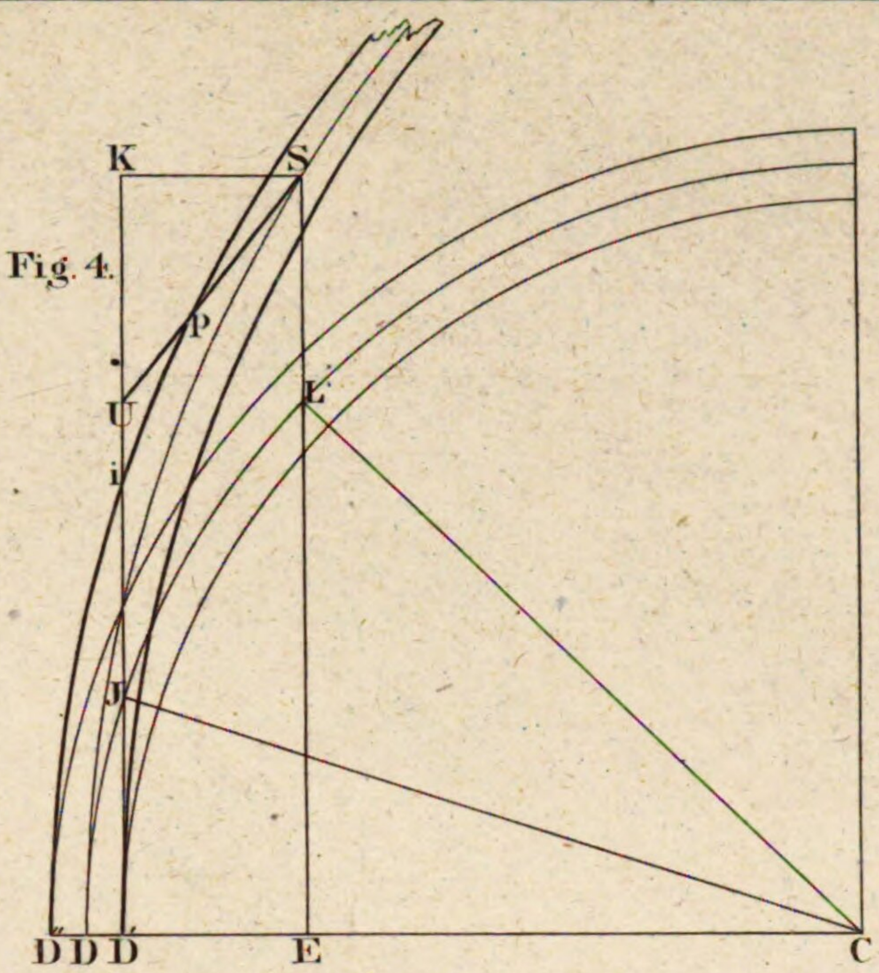

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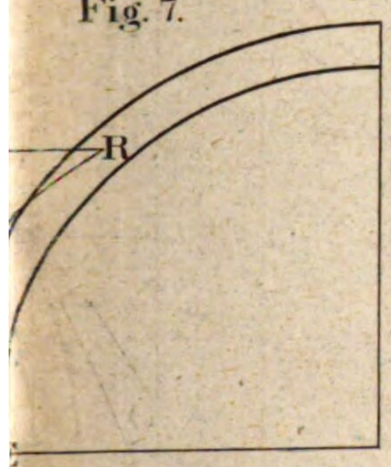

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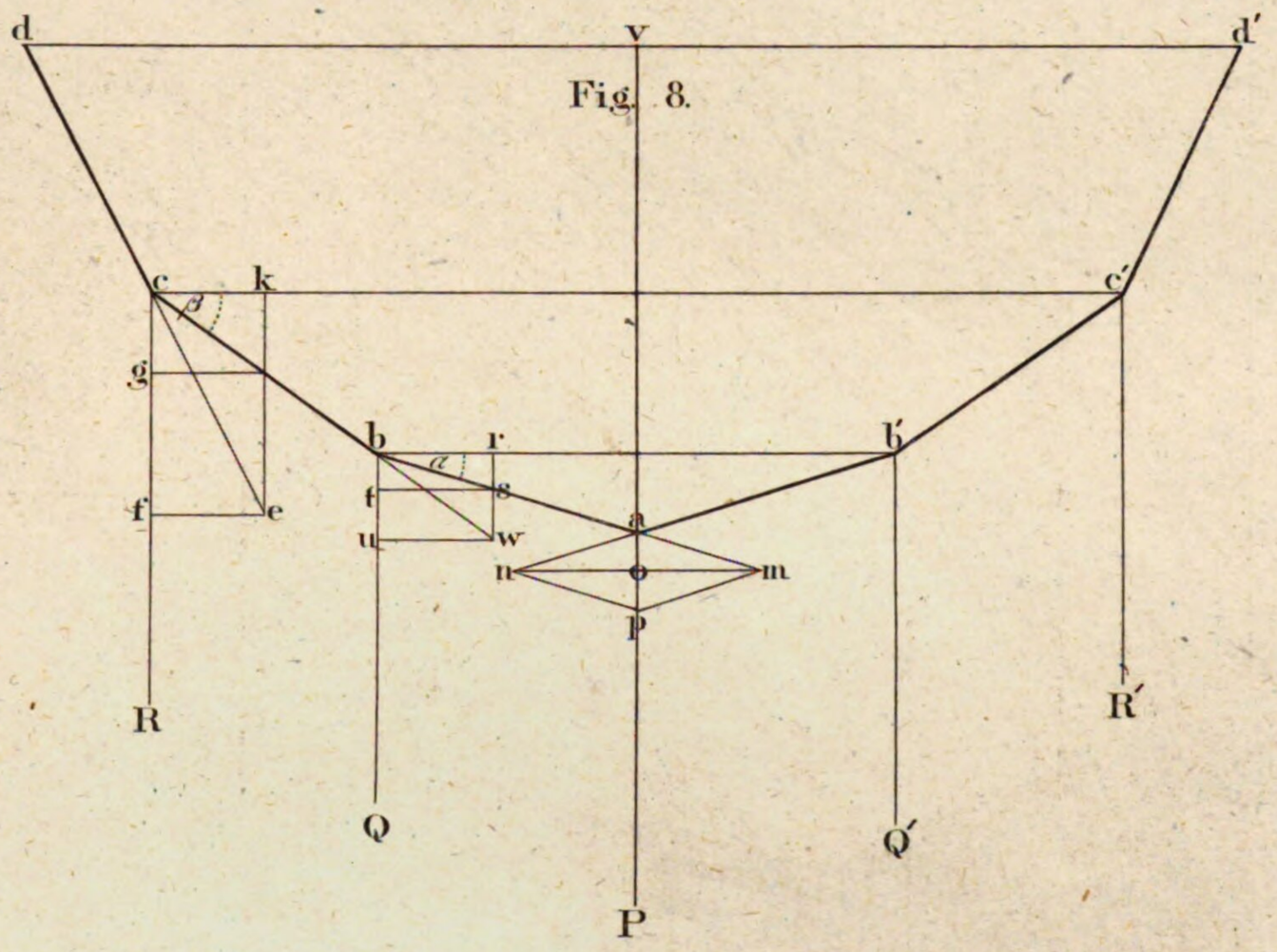

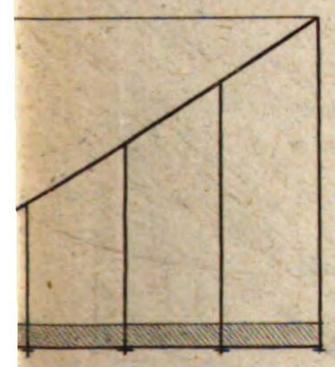

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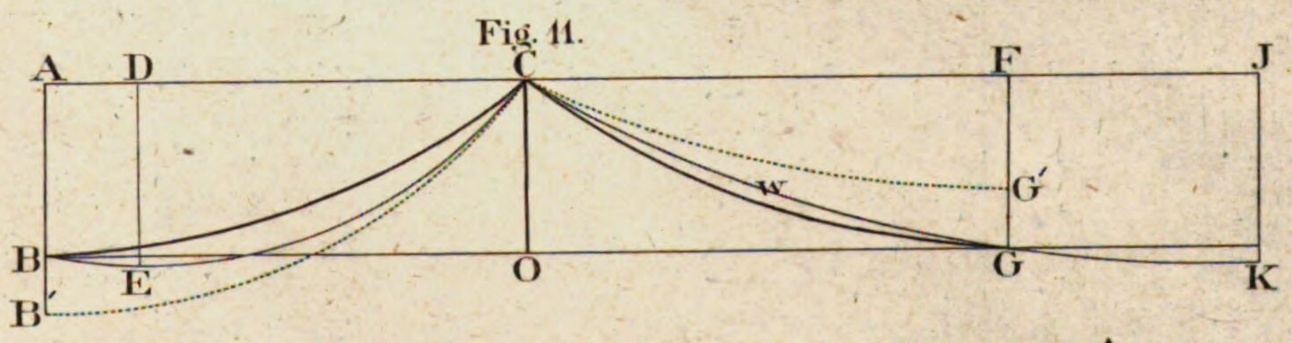

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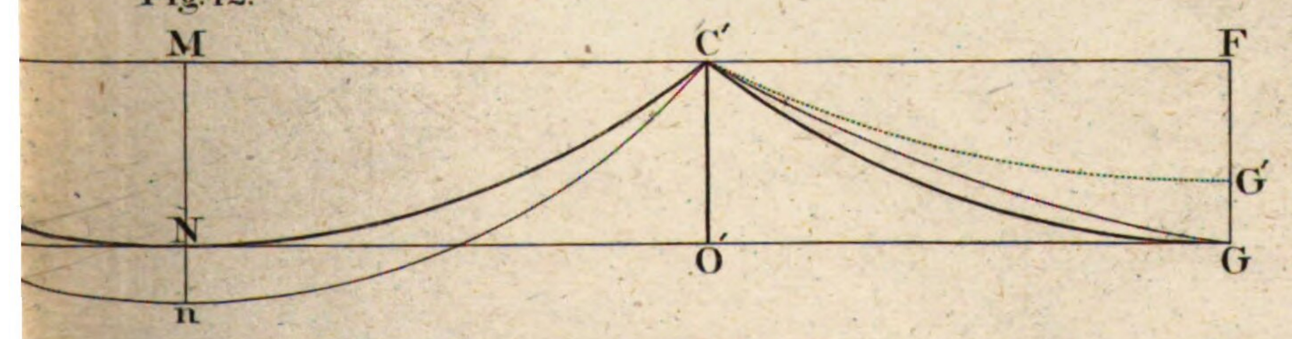

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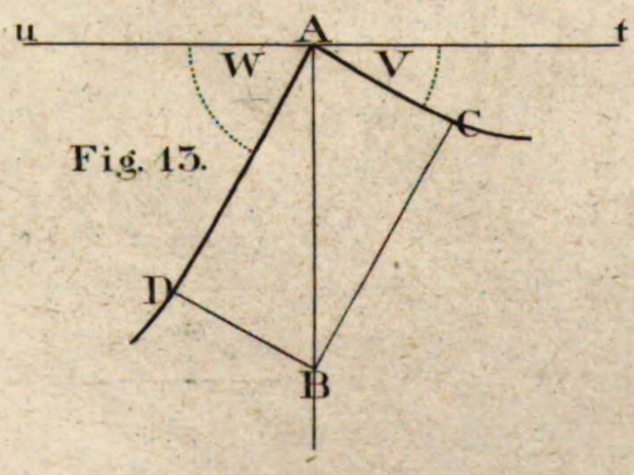

Jos. Skala sc Praga 1831.

KETTENBRÜCKE ZU HAM

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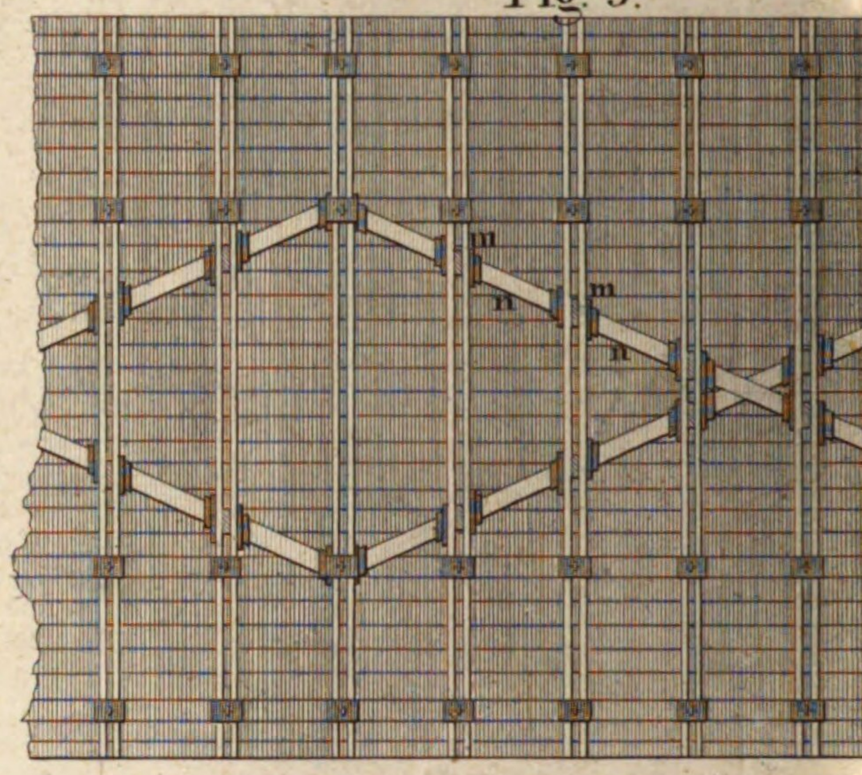
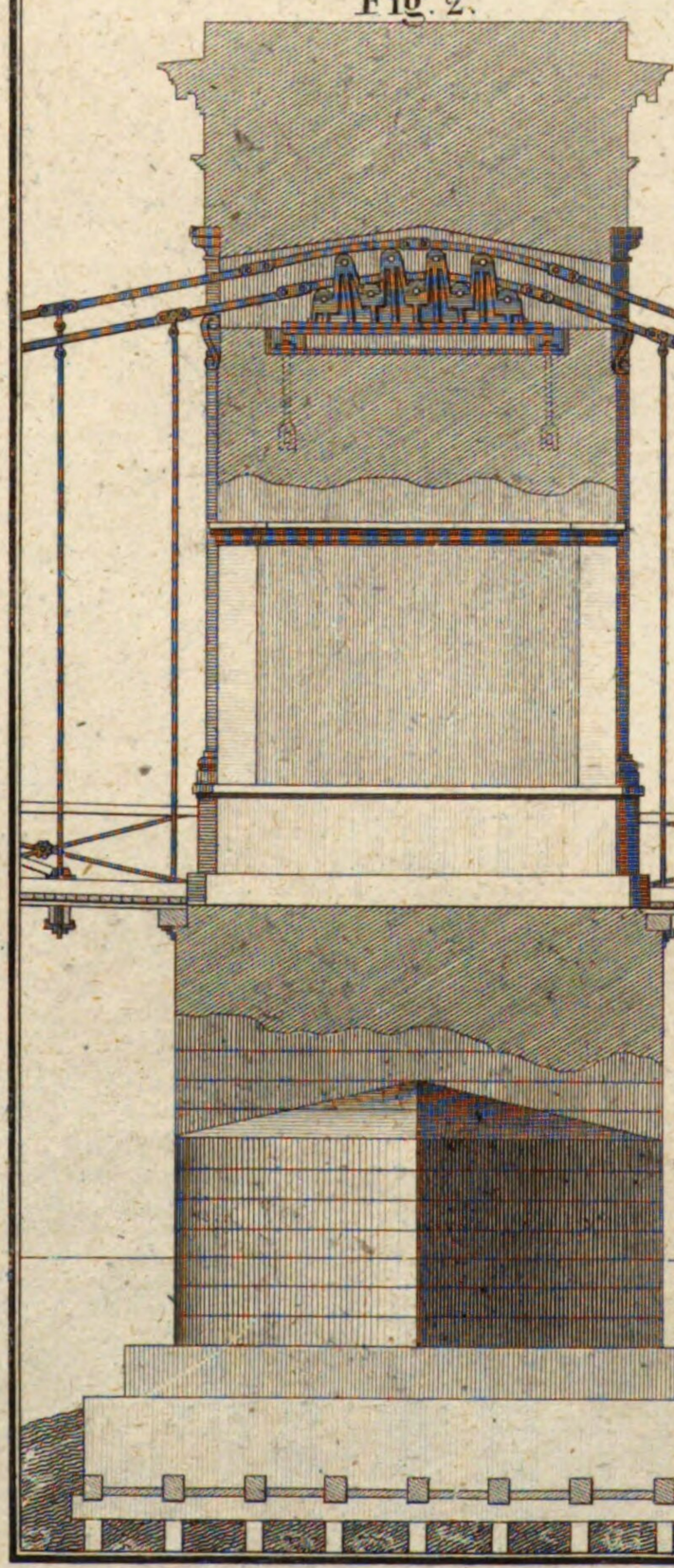
Untere Ansicht der Brück

Fig. 3.



Ansicht und Durchschnitt eines Tragpfeilers.

Fig. 2.



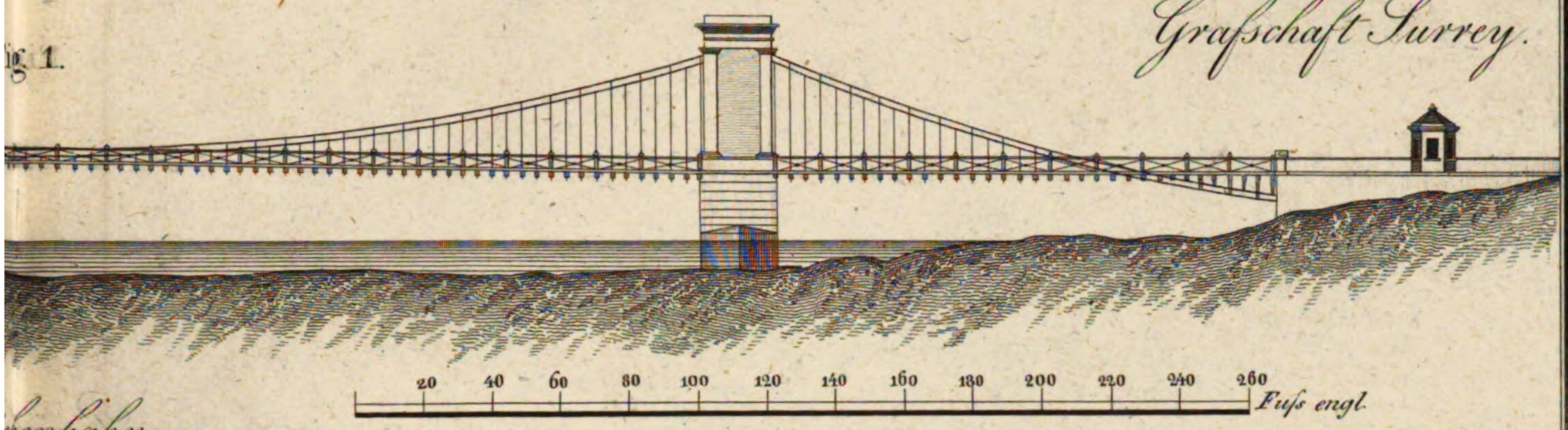
Prof

10

icht der Brücke.

g. 1.

Grafschaft Surrey.

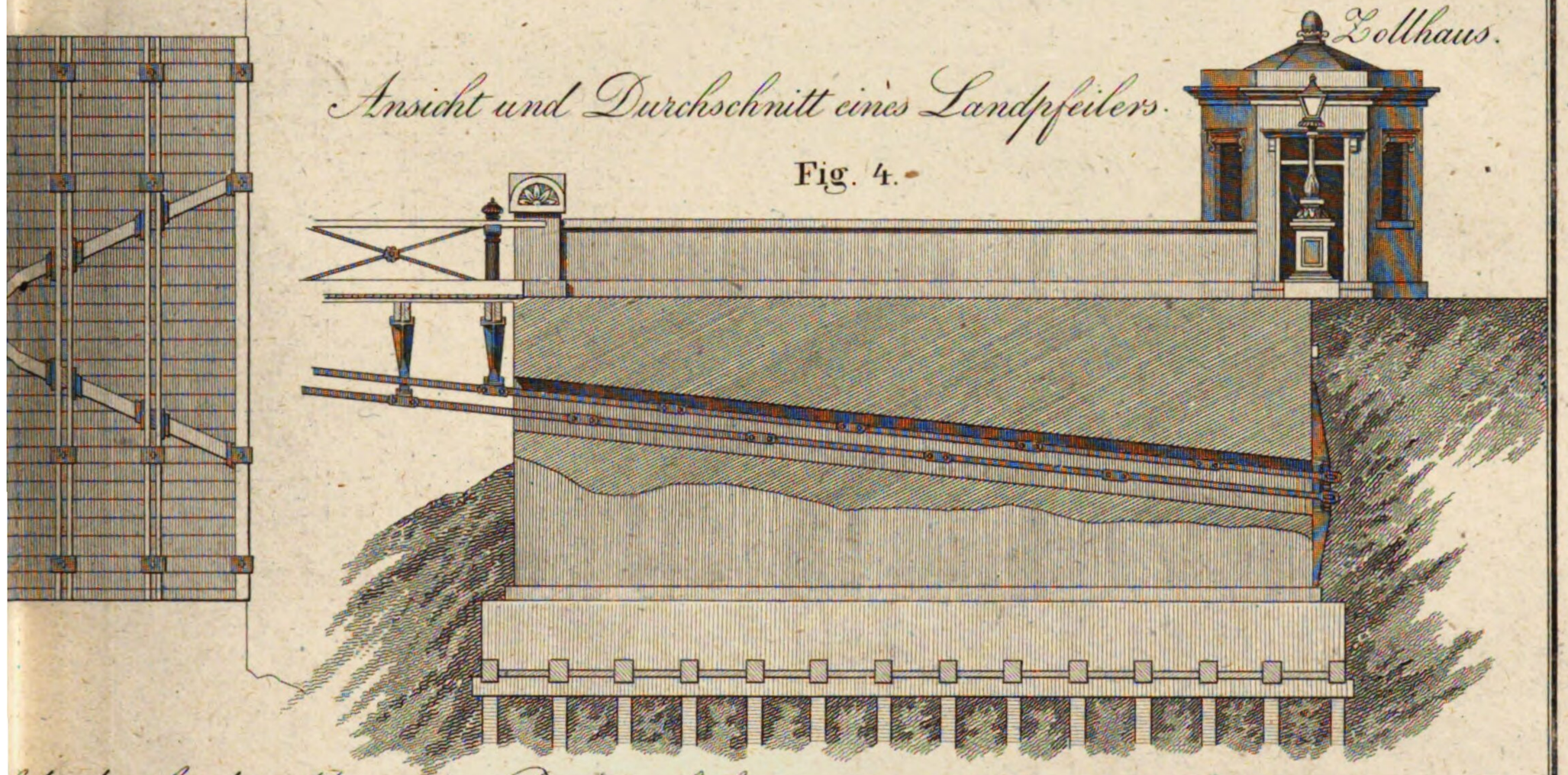


kenbahn.

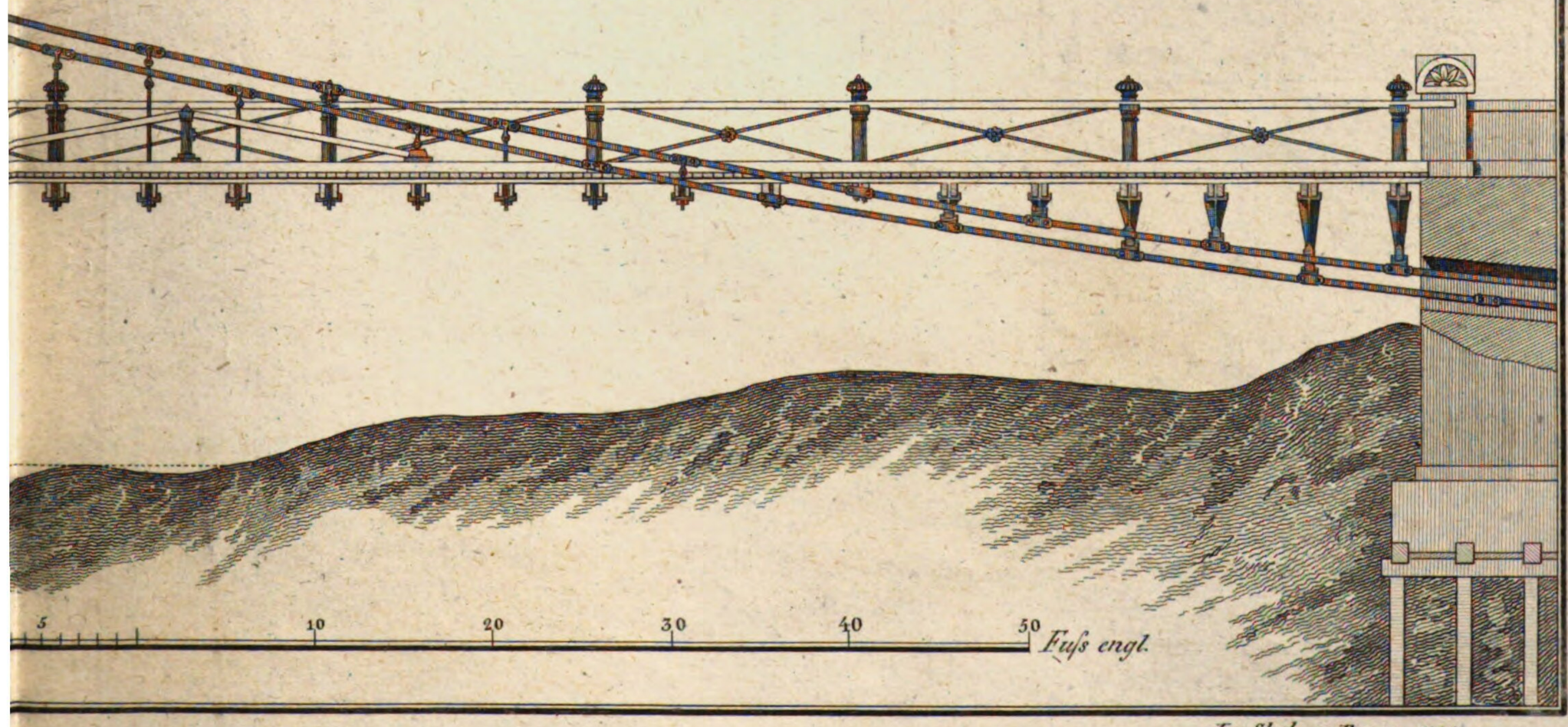
Ansicht und Durchschnitt eines Landpfeilers.

Fig. 4.

Zollhaus.



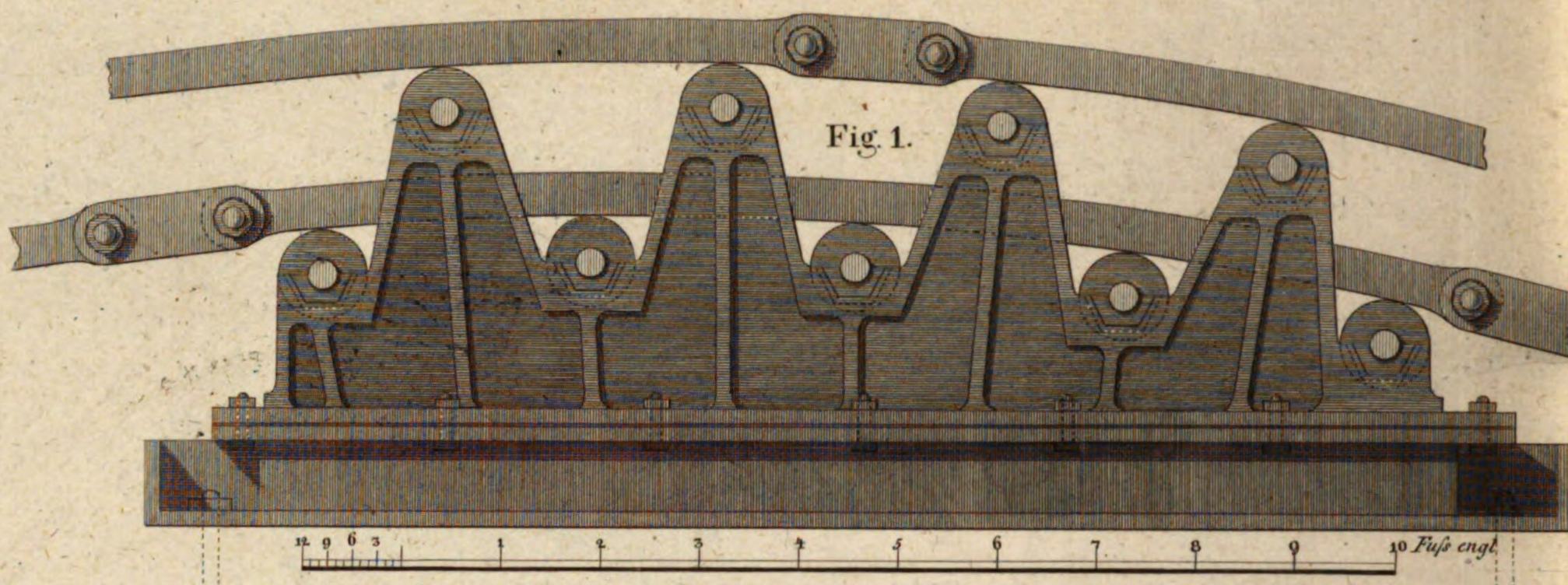
ld durch die Mitte der Brückenbahn.



Jos. Skala sc. Pragæ 1831.

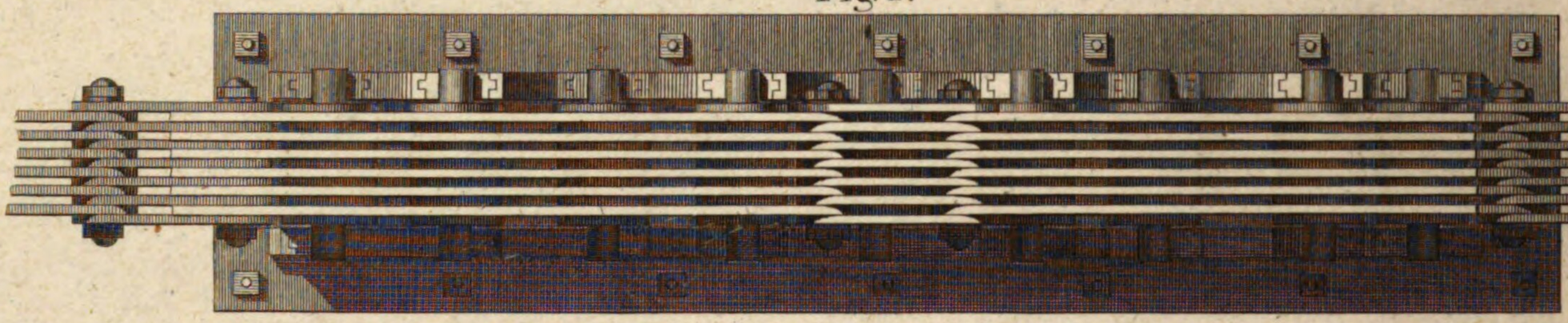
Längenansicht der Kettenauflage in den Tragpfeilern.

Fig. 1.



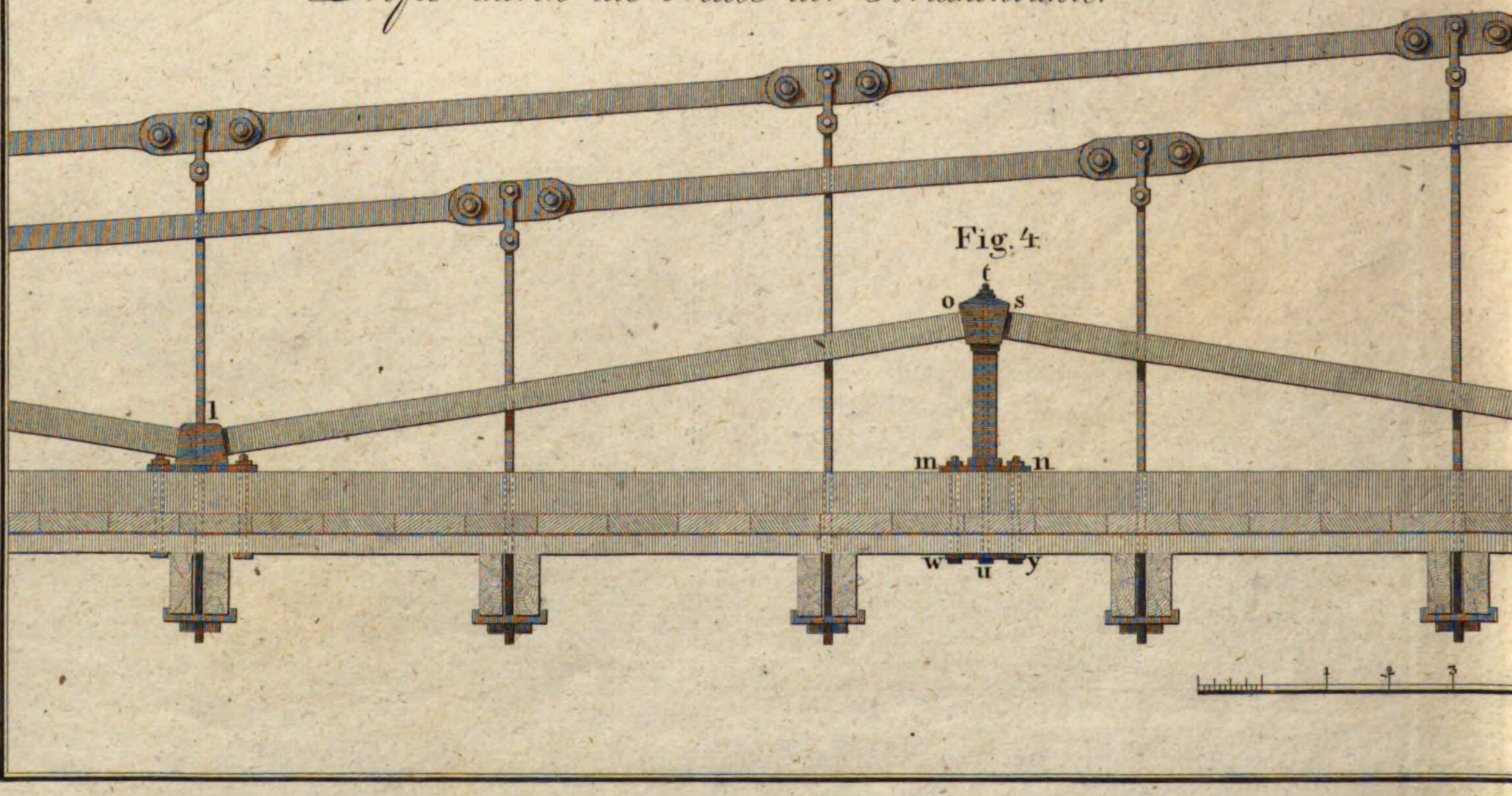
Grundriss der Ketten auf den Tragpfeilern.

Fig. 2.



Profil durch die Mitte der Brückenbahn.

Fig. 4.

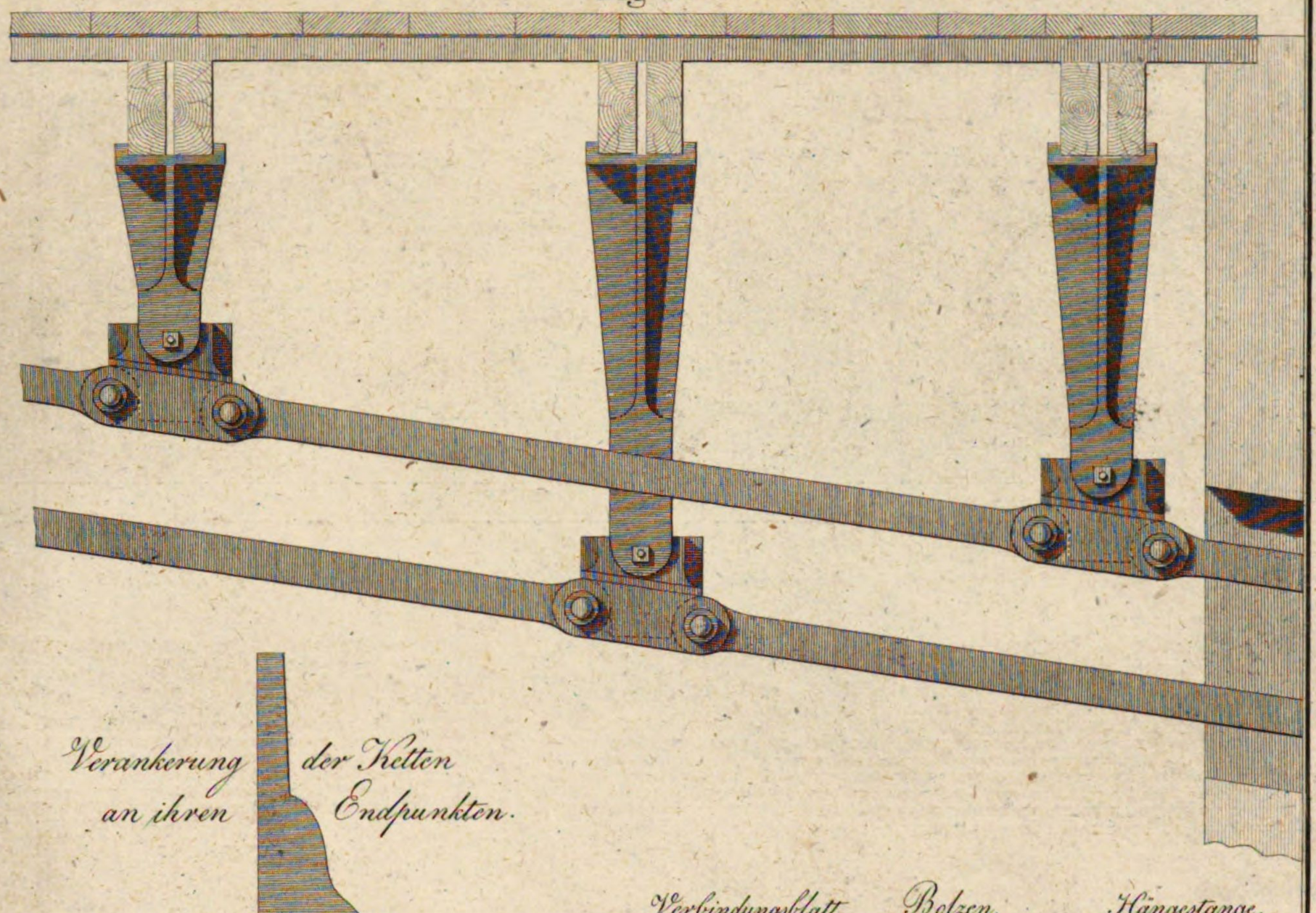


MERSMITH-KETTENBRÜCKE.

N°22.

Profil des unterstützten Theiles der Brückenbahn.

Fig 3.



Verankerung an ihren *der Ketten Endpunkten.*

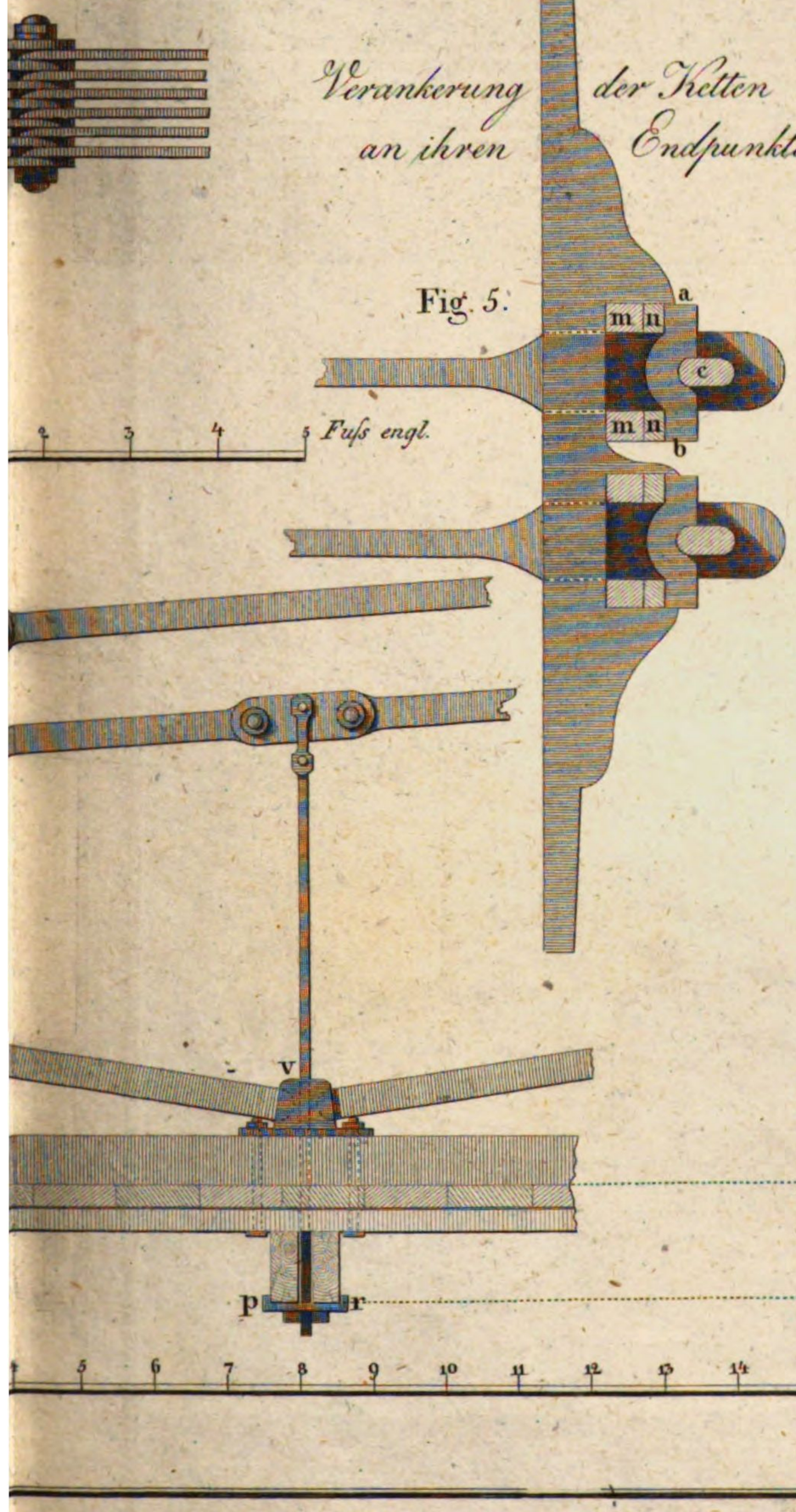


Fig. 5.

Verbindungsblatt.

Fig. 7.

Bolzen.

Fig. 8.

Hängestange.

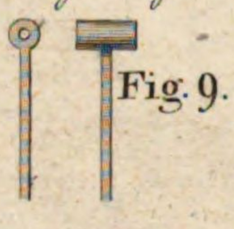
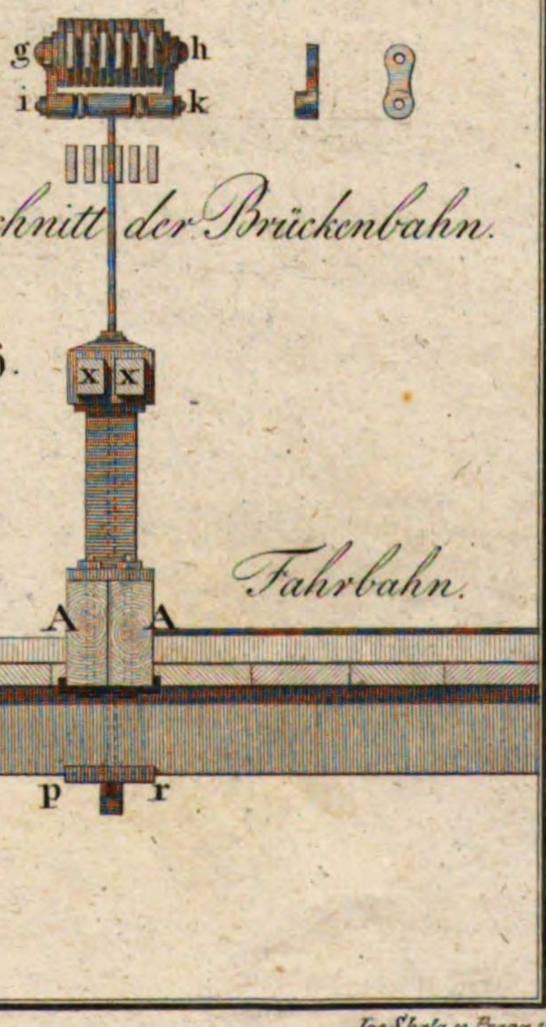


Fig. 9.



Querdurchschnitt der Brückenbahn.

Fig. 6.

Fußweg. *Fahrbahn.*

5 6 7 8 9 10 11 12 13 14 15 16 17 *Fuss engl.*

Jos. Skala sc. Praga 1831.

№23.

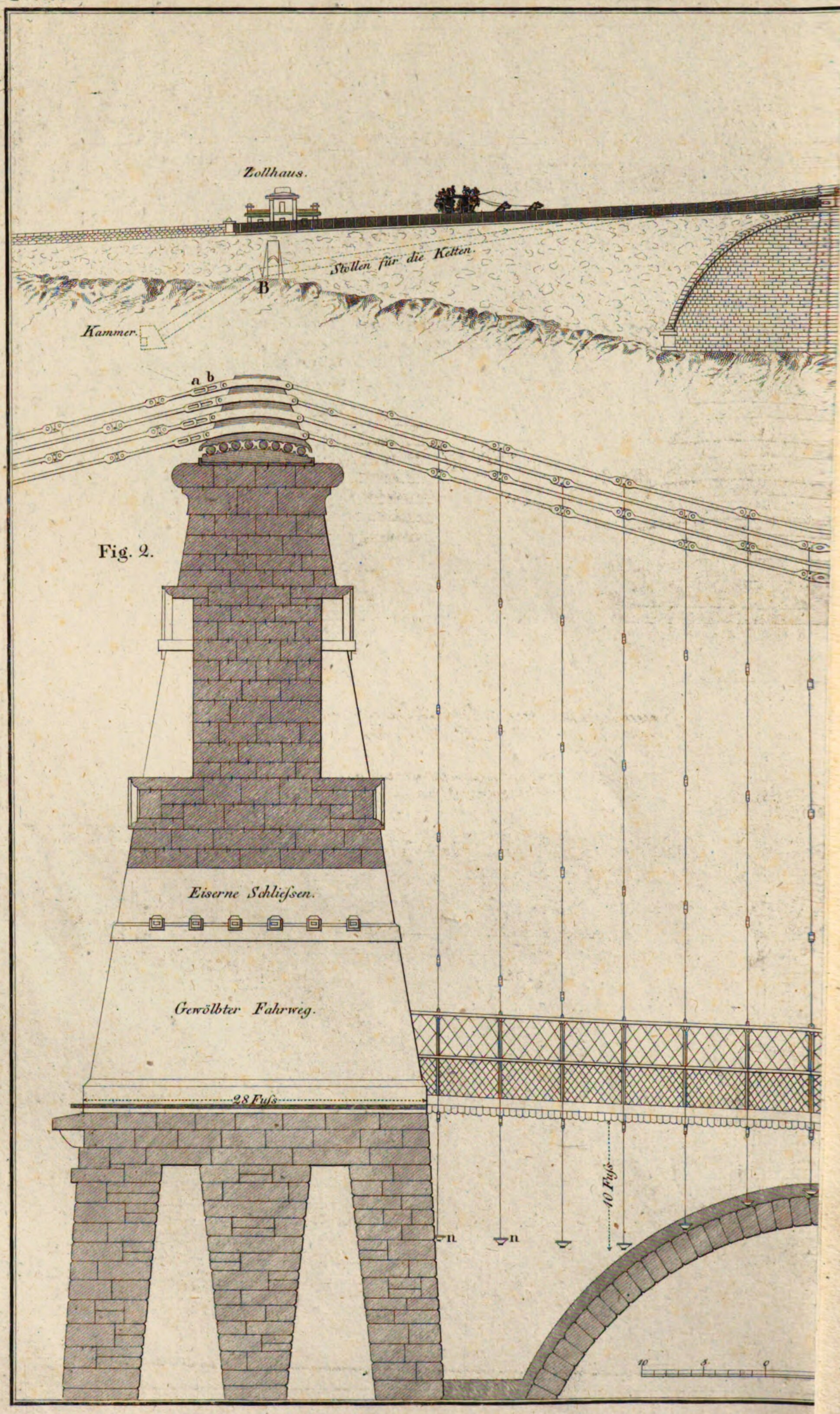

Zollhaus.
Stollen für die Ketten.
B
Kammer.
a b
Eiserne Schliessen.
Gewölbter Fahrweg.
28 Fuss
10 Fuss
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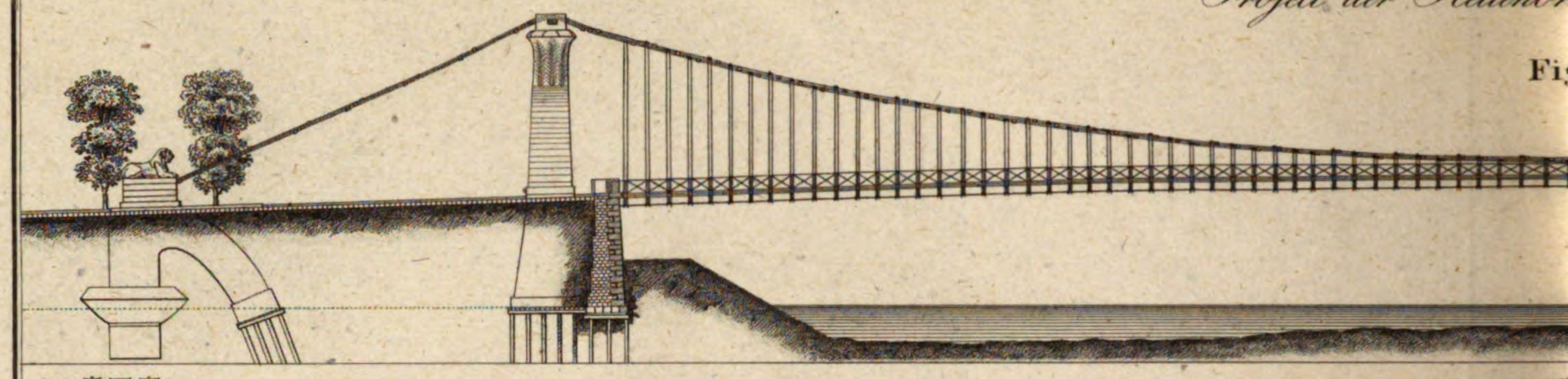
Fig. 2.

KETTENBRÜCKE ÜBE

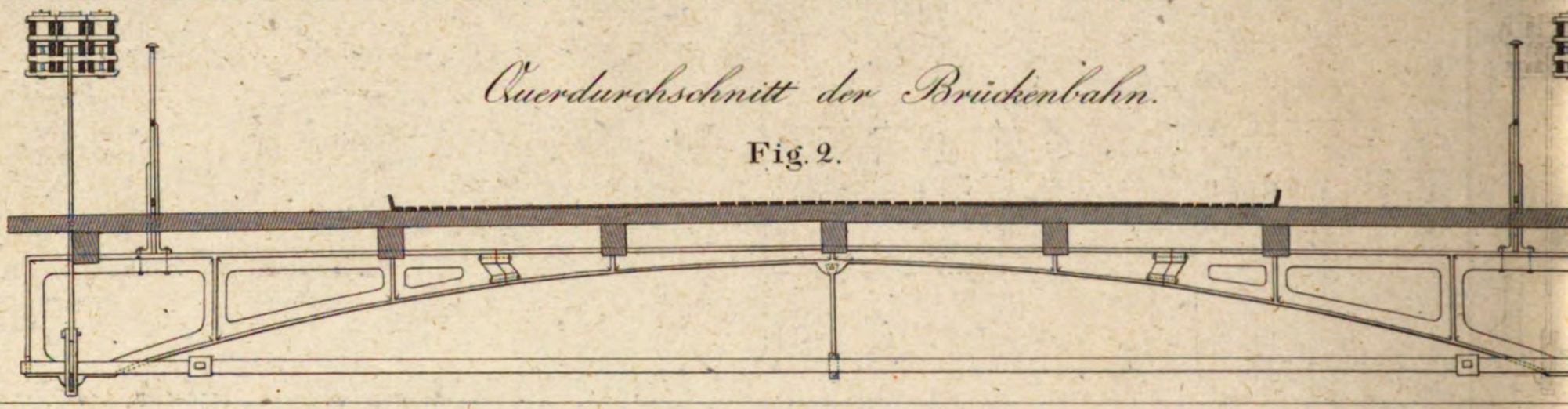
Project der Kettenbr

Fi



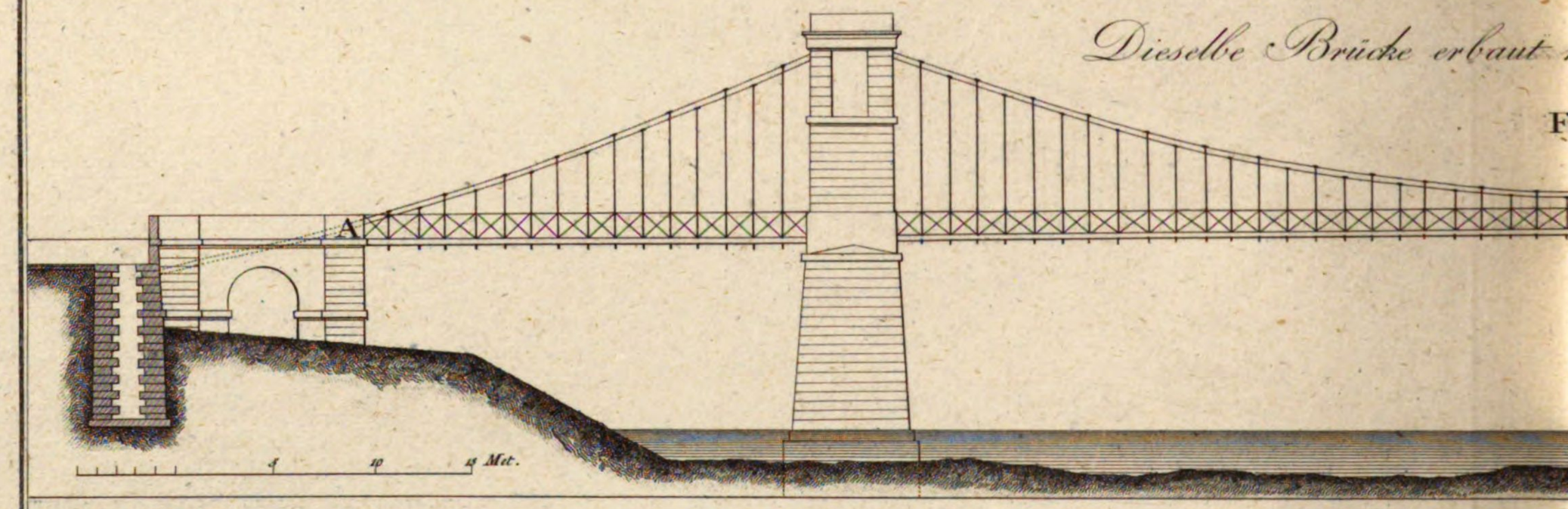
Querdurchschnitt der Brückenbahn.

Fig. 2.

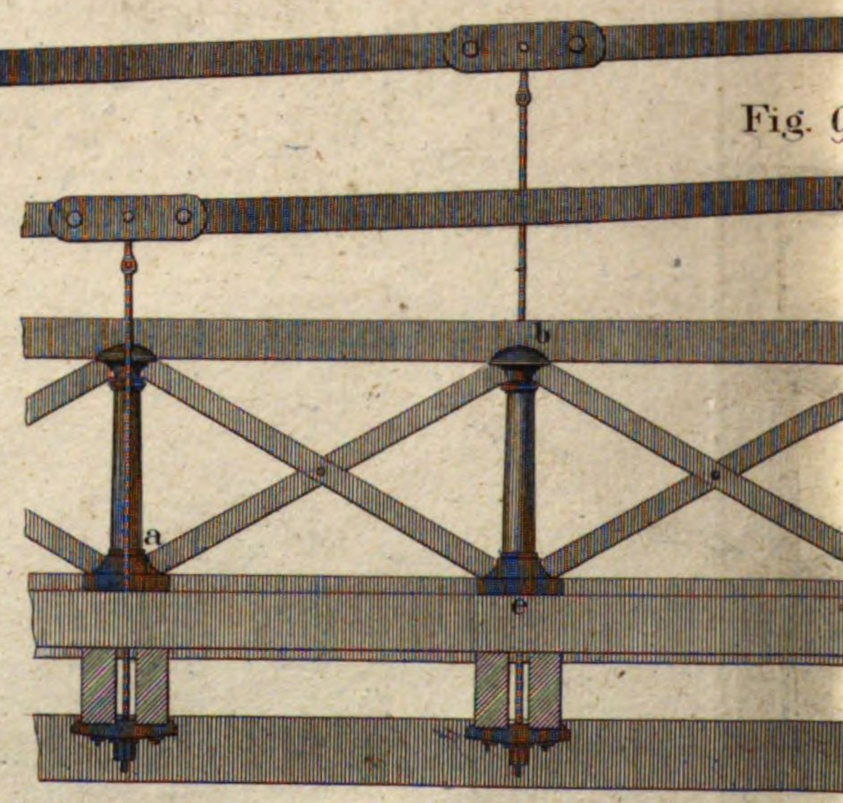


Dieselbe Brücke erbaut

F

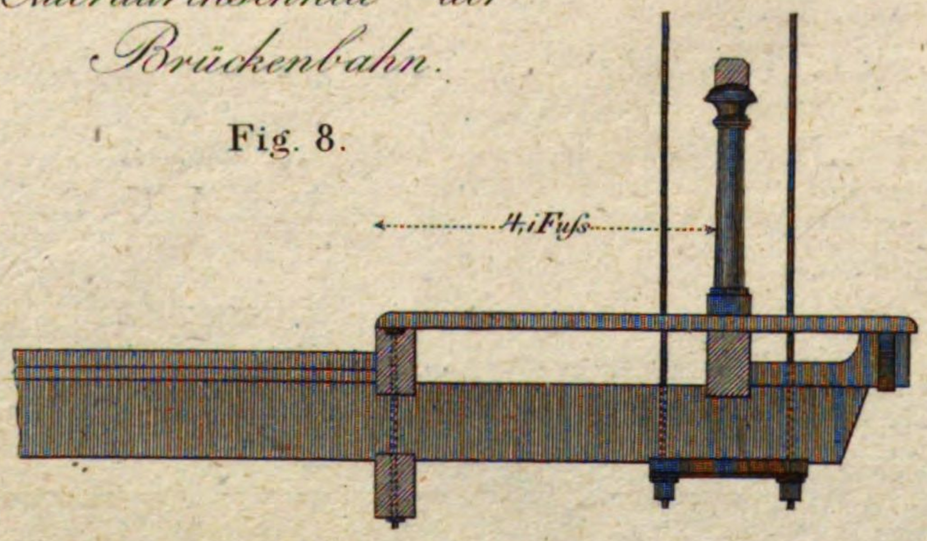


Längendurchschnitt der



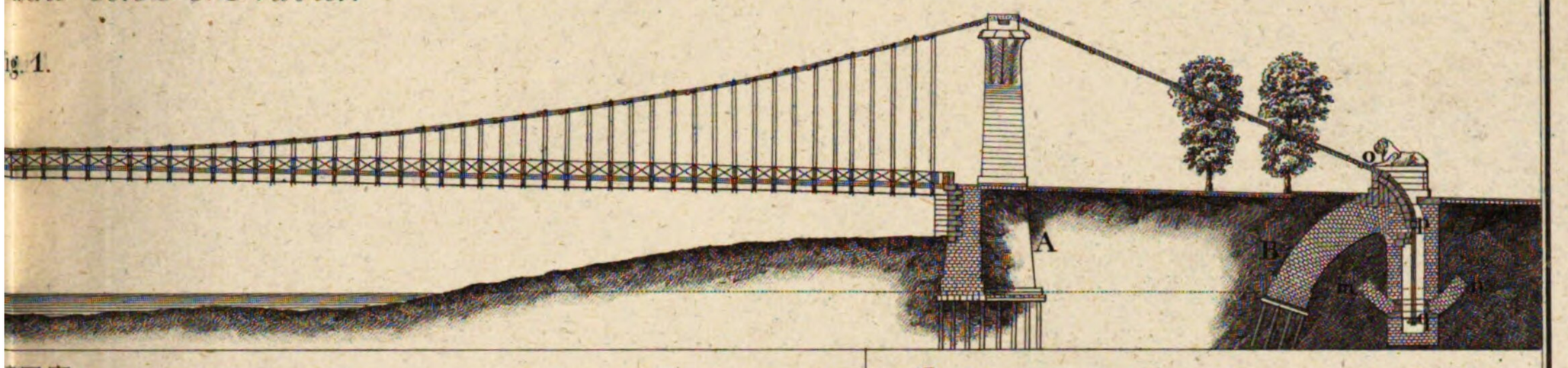
Querdurchschnitt der Brückenbahn.

Fig. 8.



ücke von H. Navier.

ig. 1.



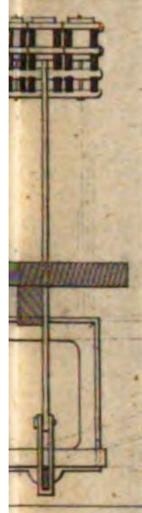


Fig. 5.

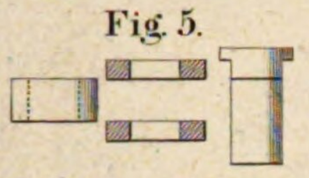


Fig. 6.

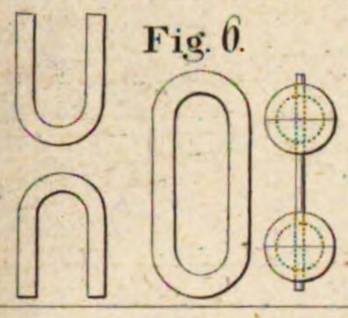
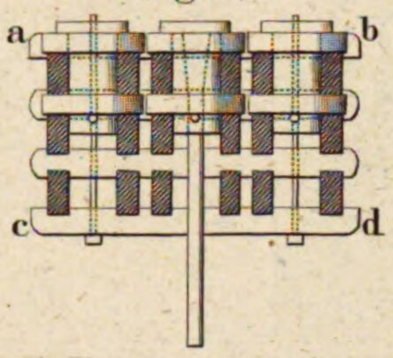
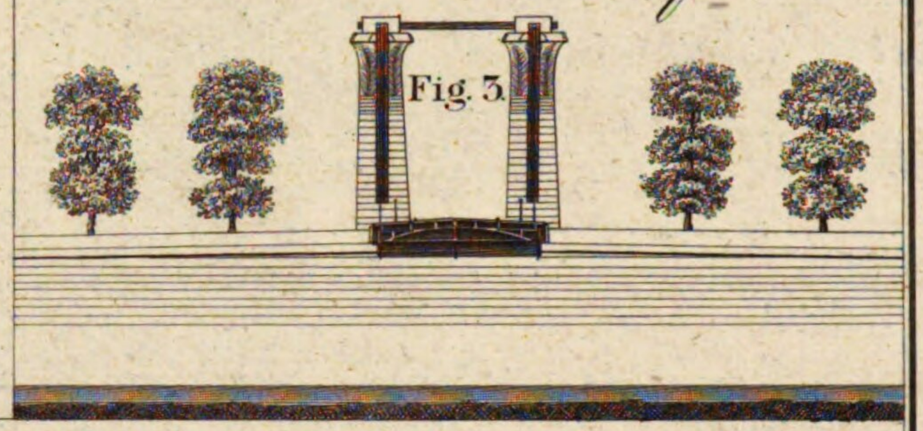


Fig. 4.



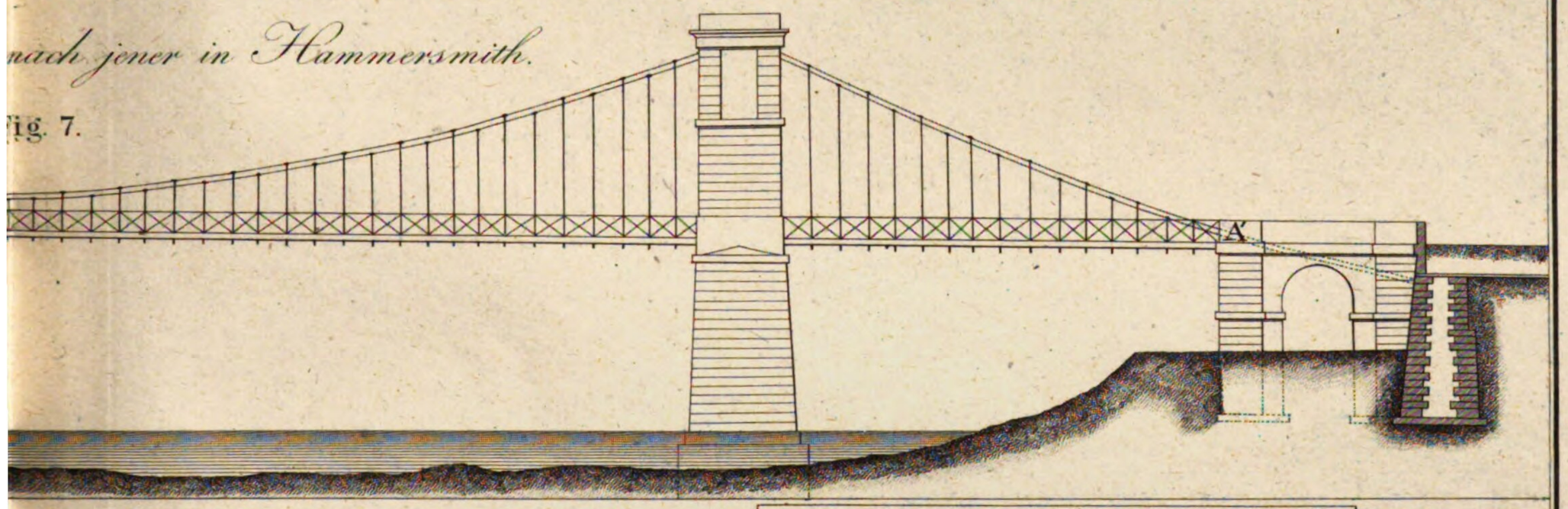
Vordere Ansicht der Pfeiler.

Fig. 3.



nach jener in Hammersmith.

ig. 7.



Brückenbahn.

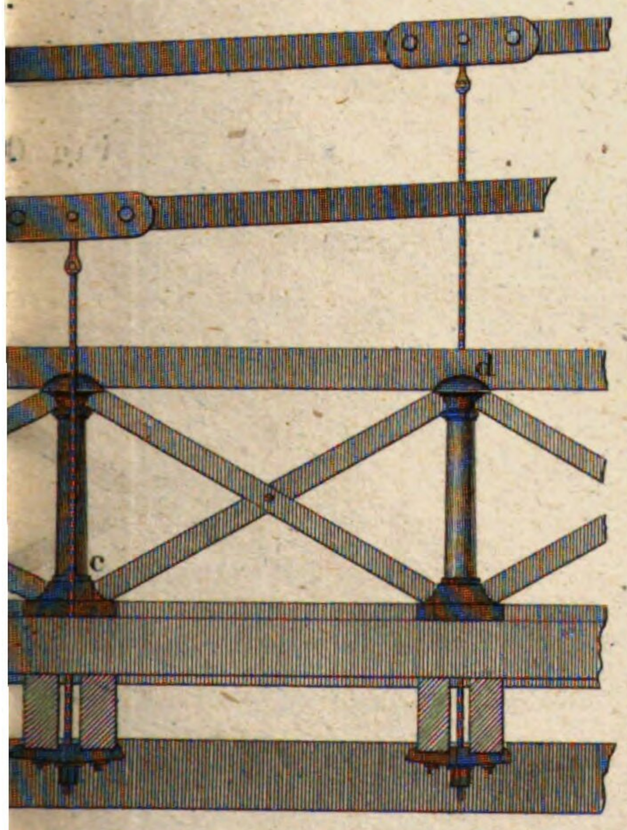
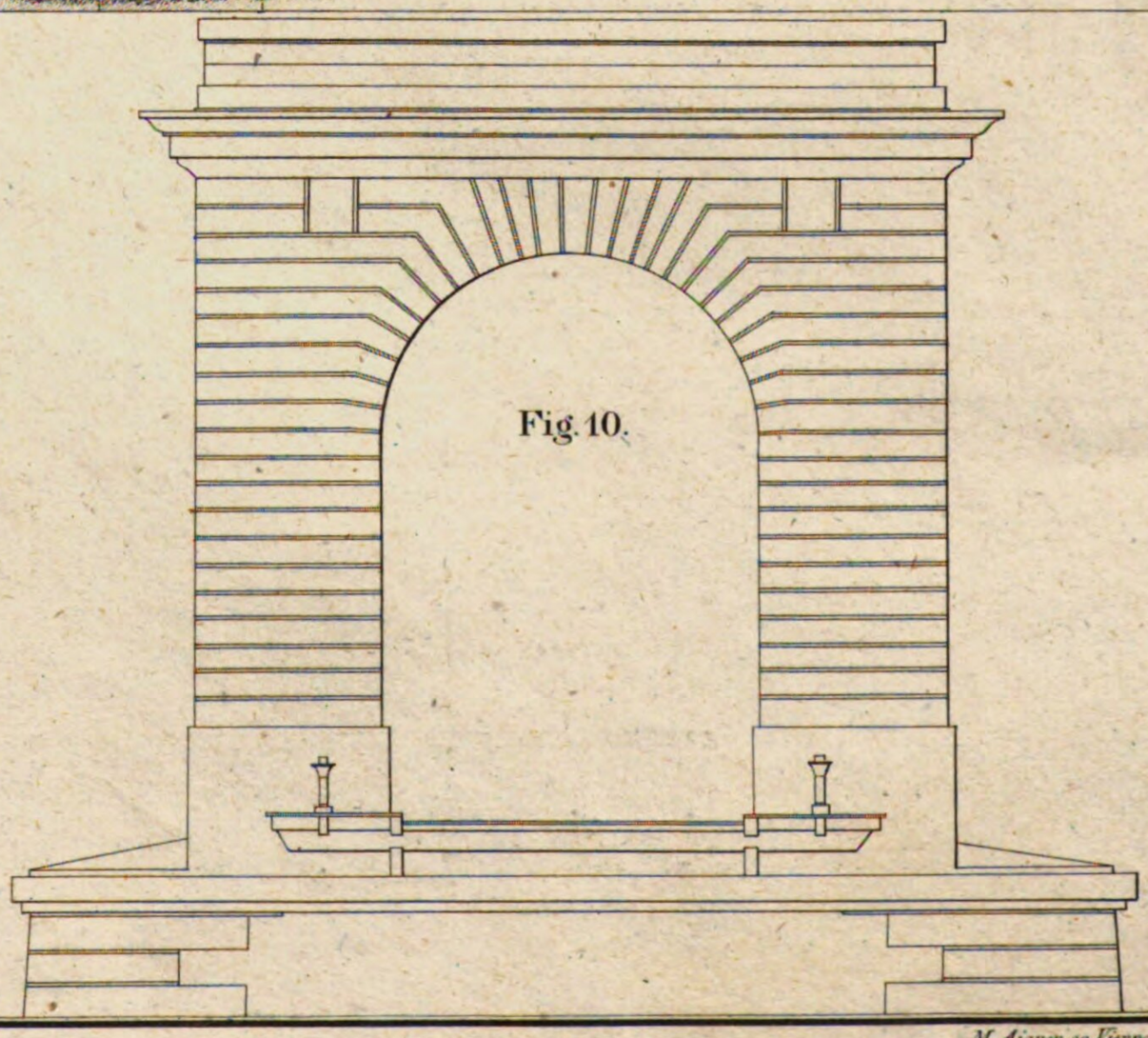


Fig. 10.



M Aigner sc Vienna 1830.

KETTENBRÜCKEN ZU BA

Fig. 1.

Durchschnitt und Ansicht der Ketten

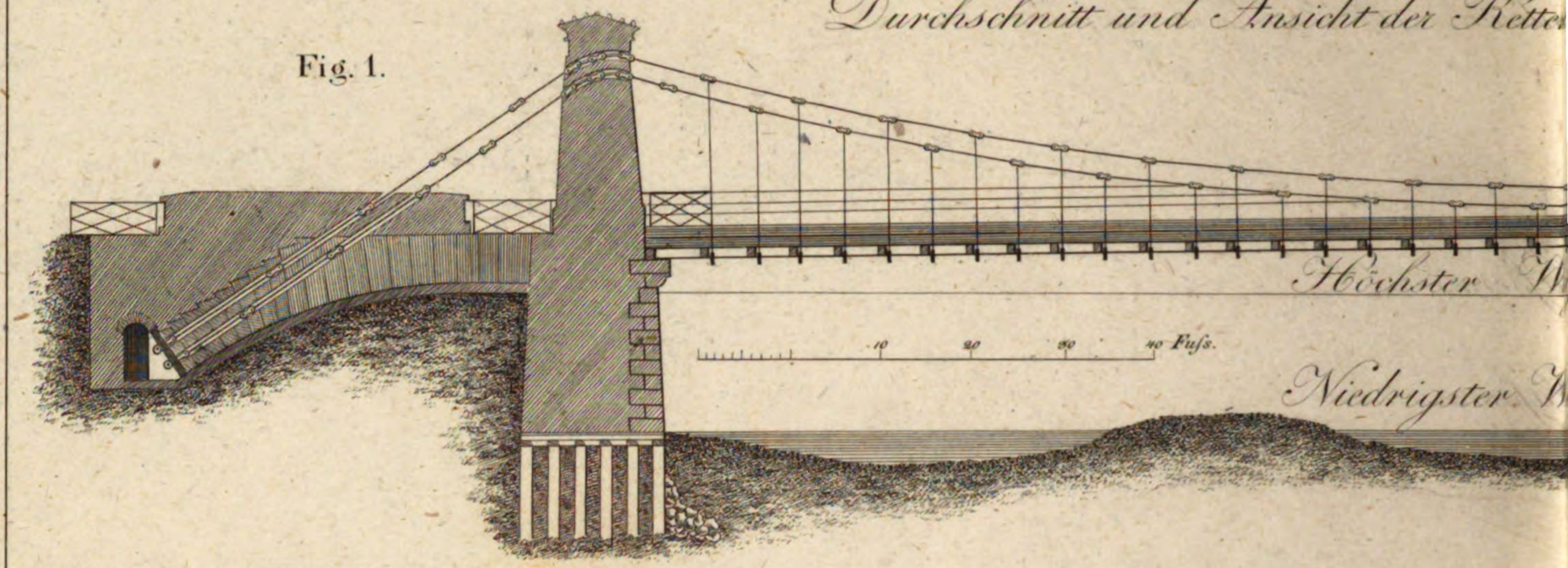
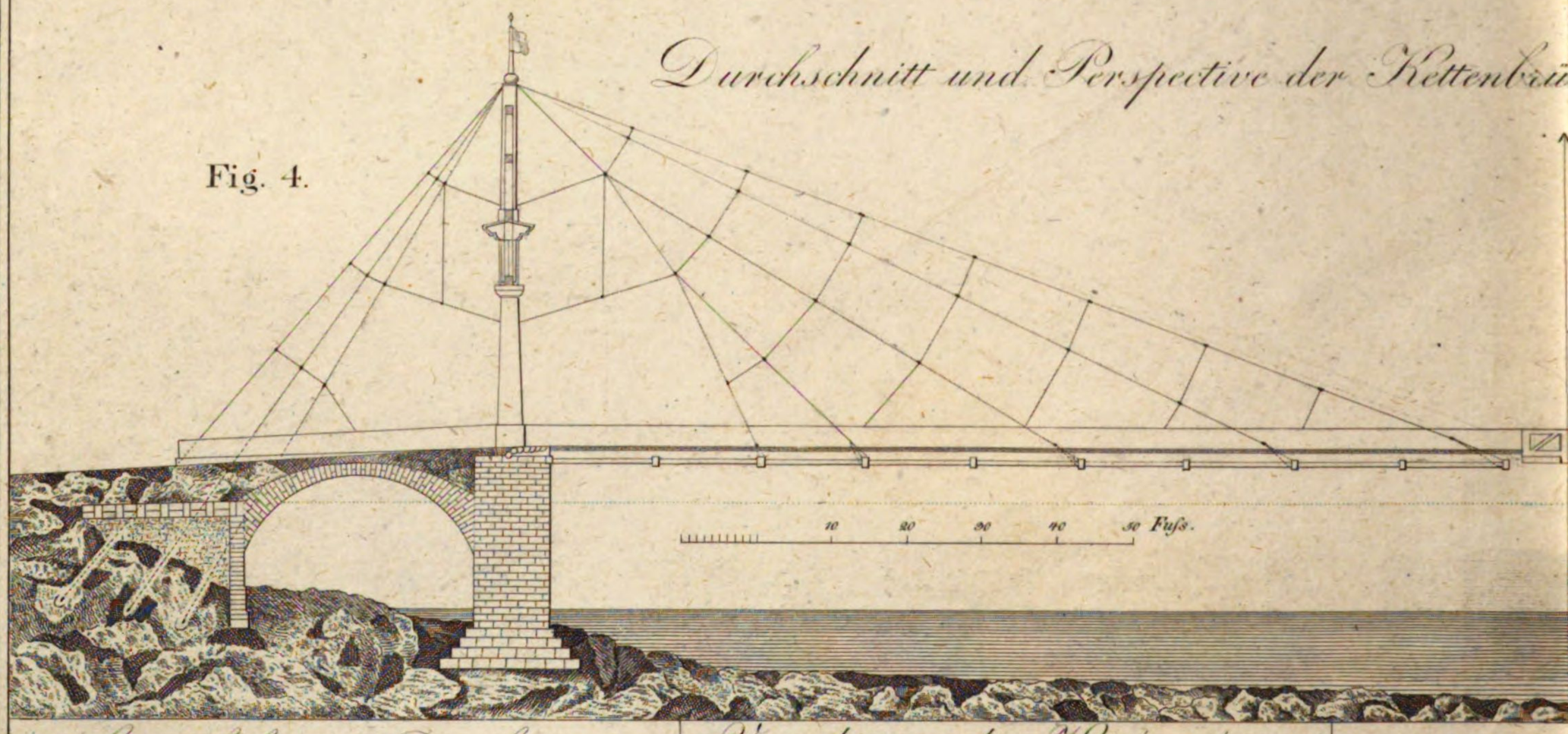


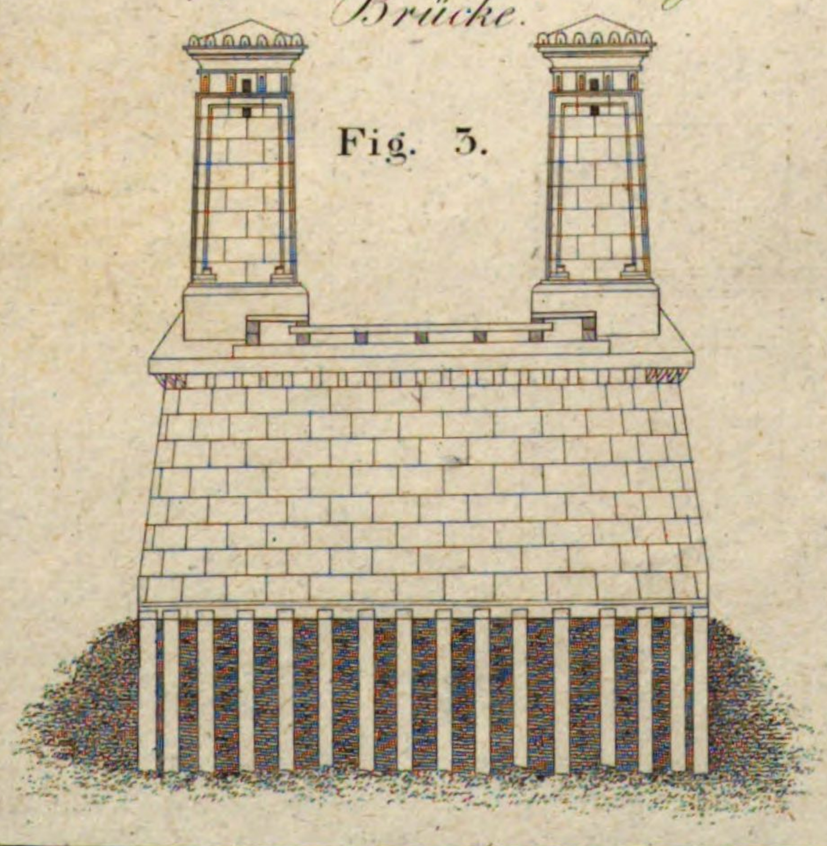
Fig. 4.

Durchschnitt und Perspective der Kettenbrü



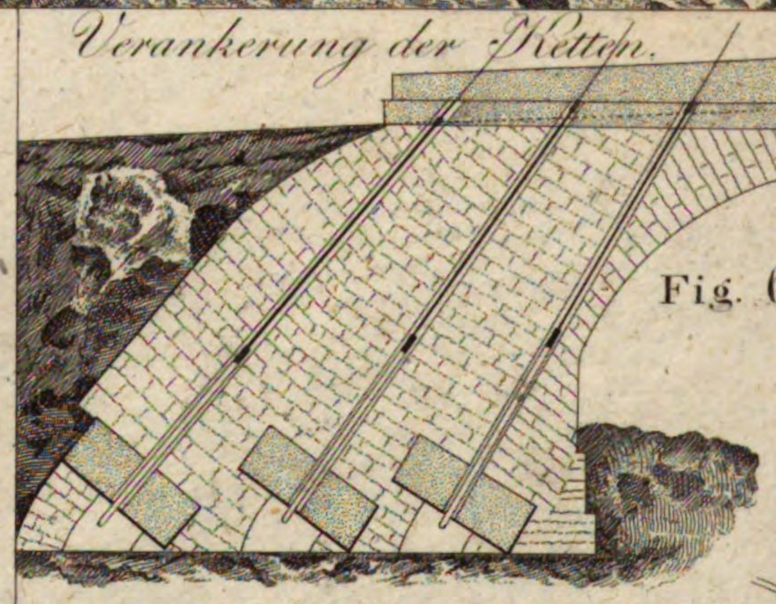
Stützpfeiler der Bamberger Brücke.

Fig. 3.

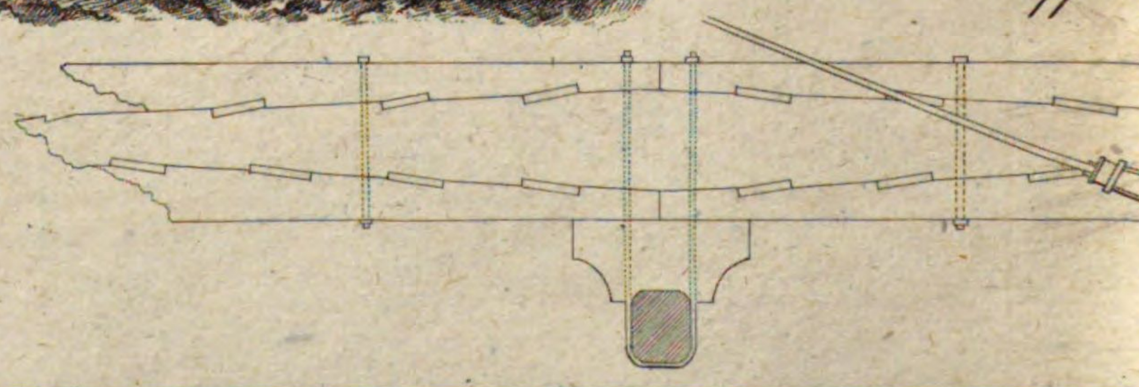


Verankerung der Ketten.

Fig. 6.

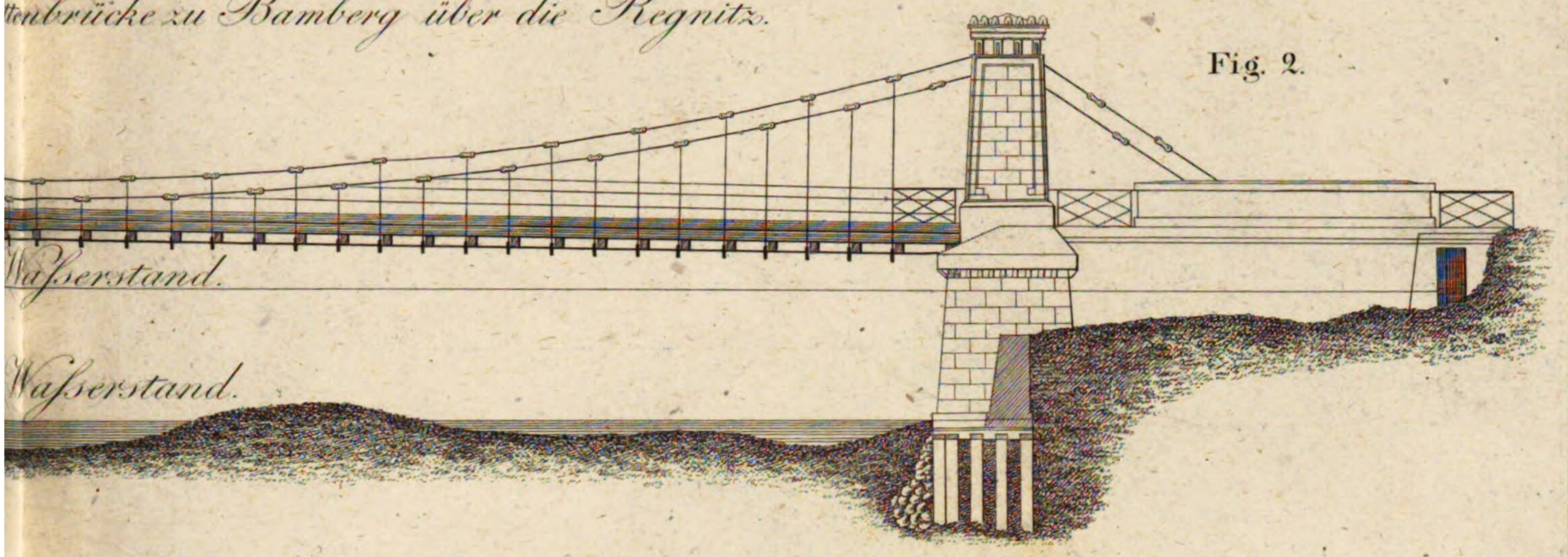


Eröffn



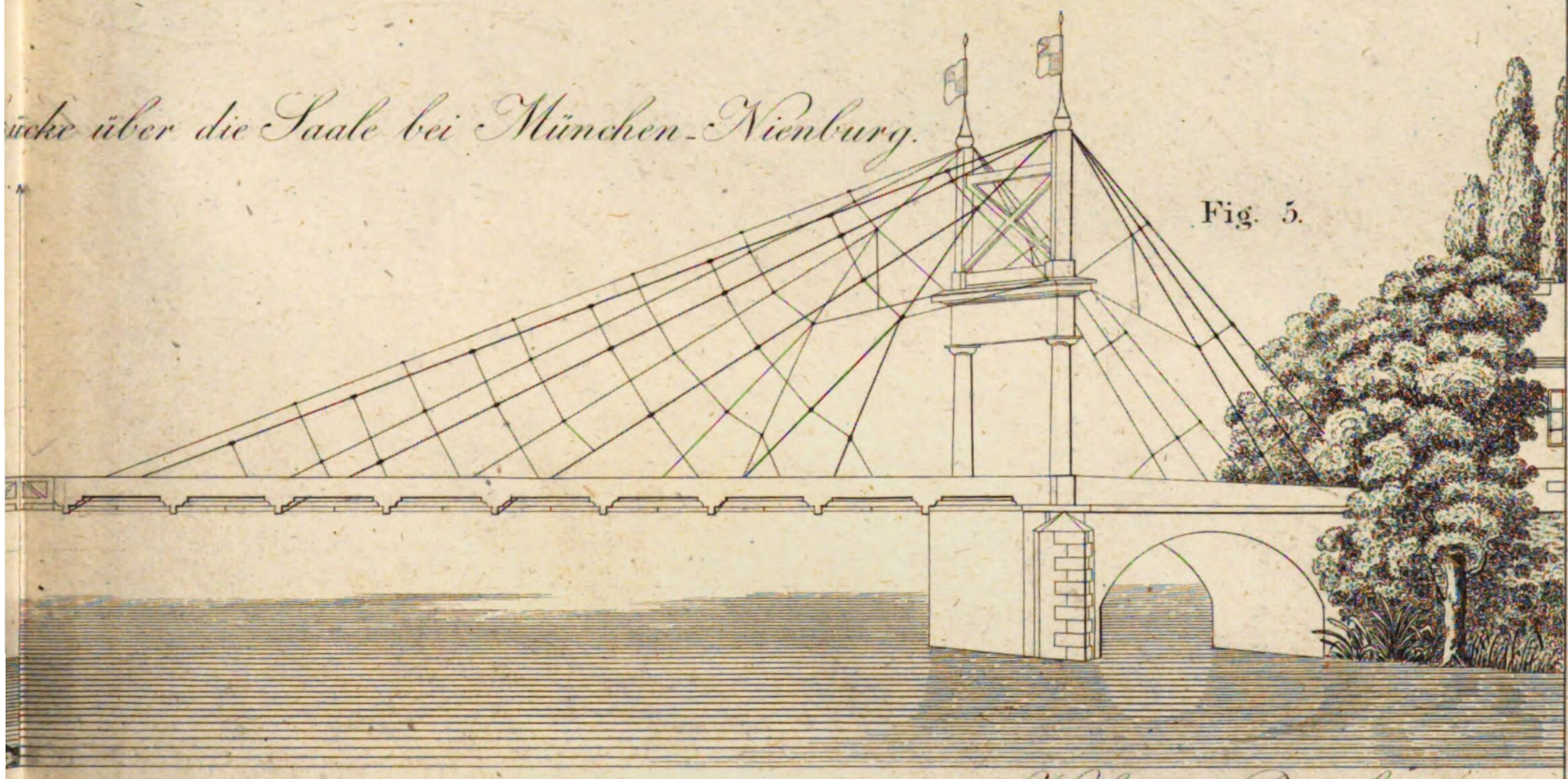
tenbrücke zu Bamberg über die Regnitz.

Fig. 2.



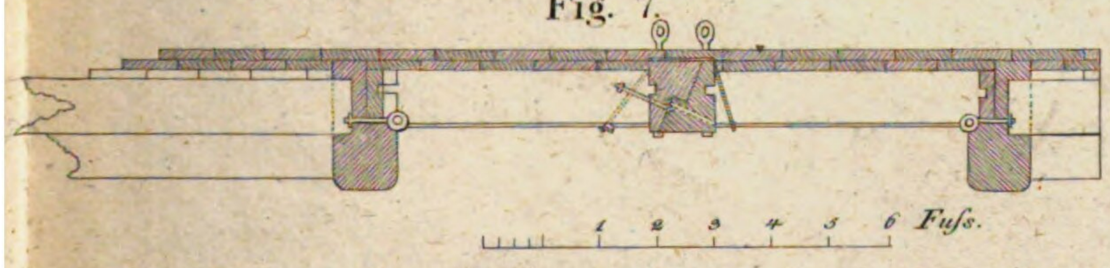
ücke über die Saale bei München-Nienburg.

Fig. 5.



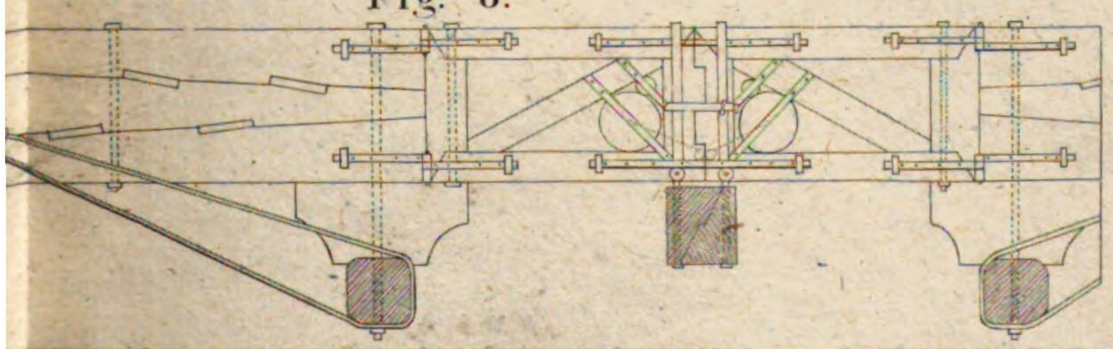
Längenprofil der Klappe.

Fig. 7.



nungsthor in der Mitte der Brücke.

Fig. 8.



Hölzerne Portale.

Fig. 9.

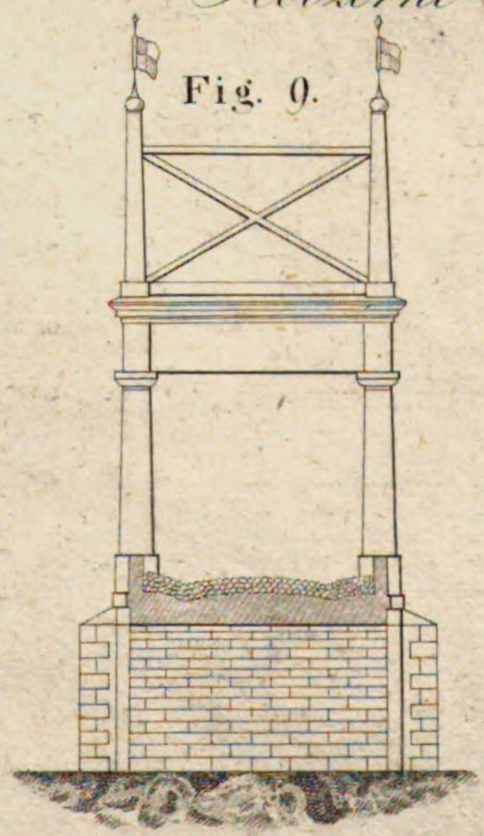
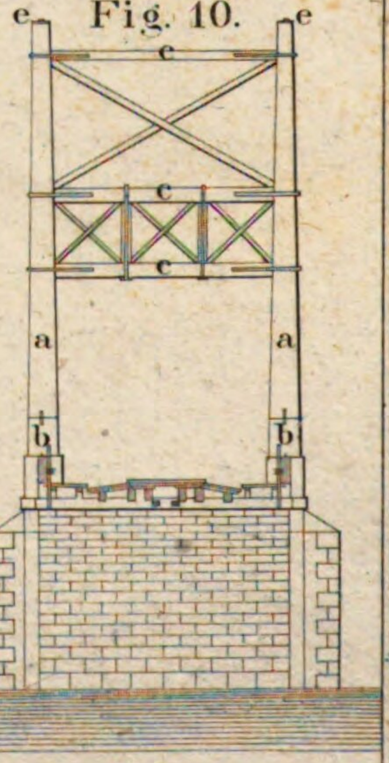
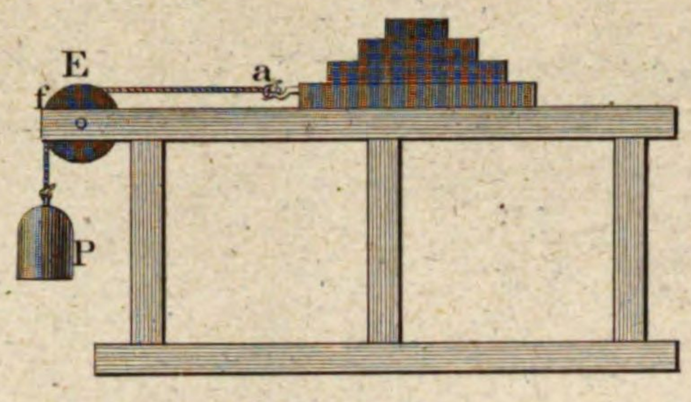


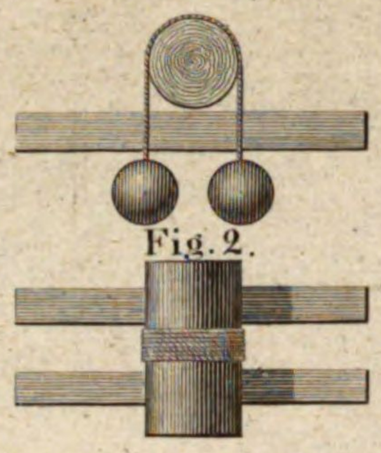
Fig. 10.

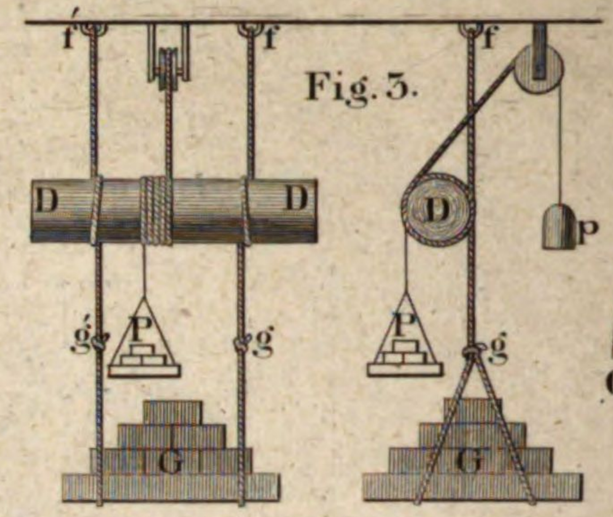


Bauer sc. Vienna 1830.

Fig. 1.







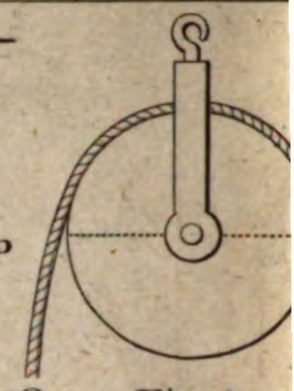


Fig. 9.

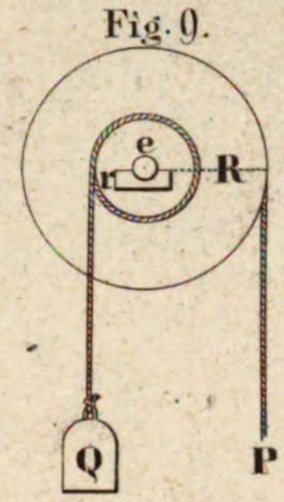
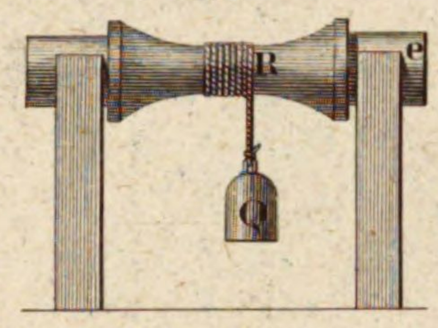
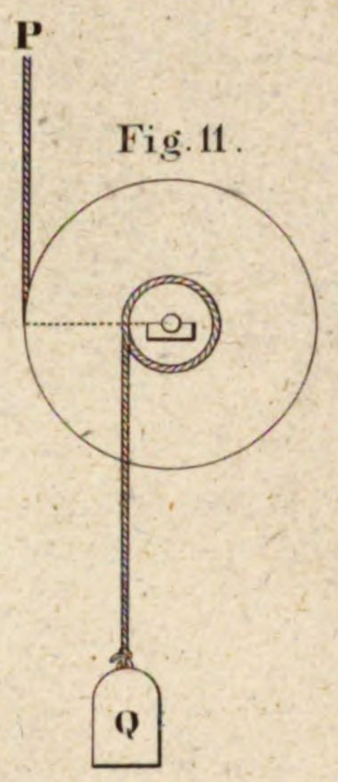
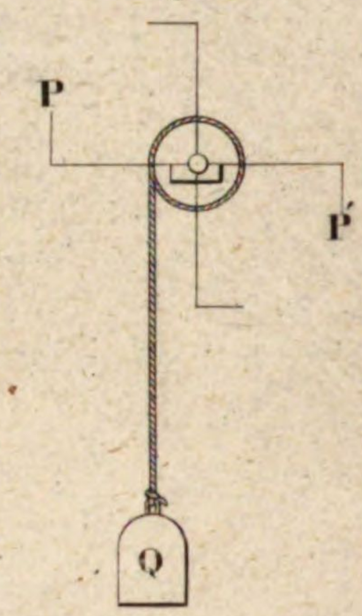
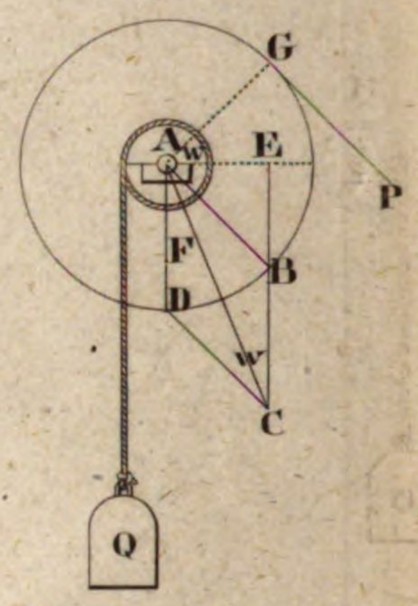


Fig. 10.









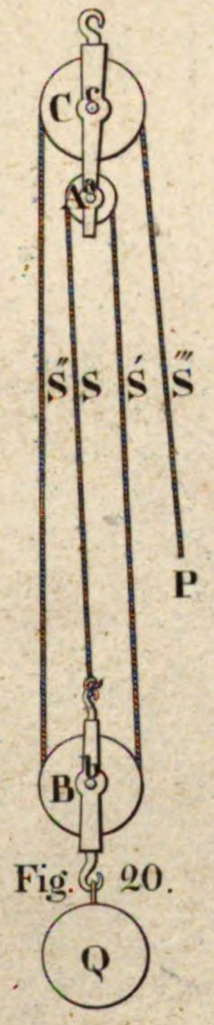


Fig. 20.

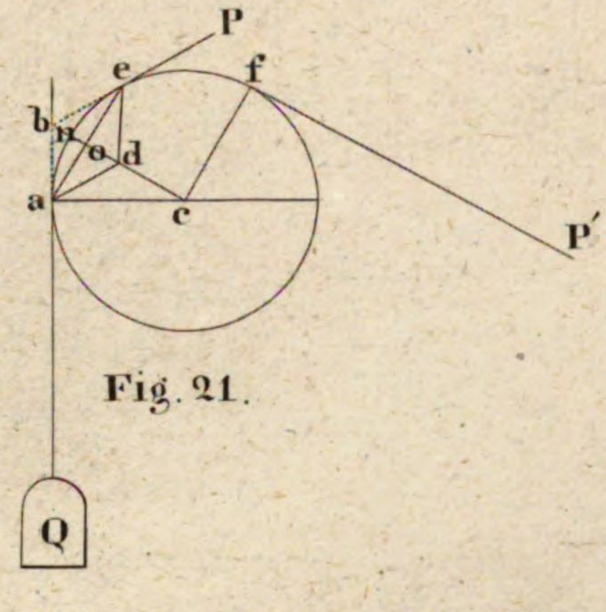


Fig. 21.

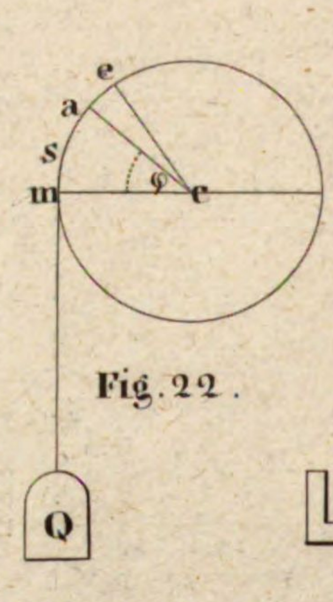
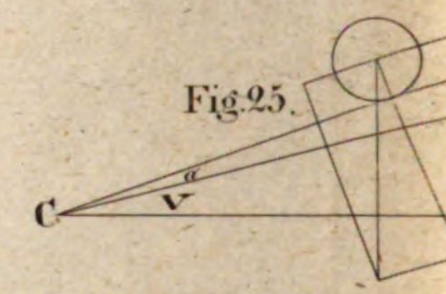


Fig. 22.



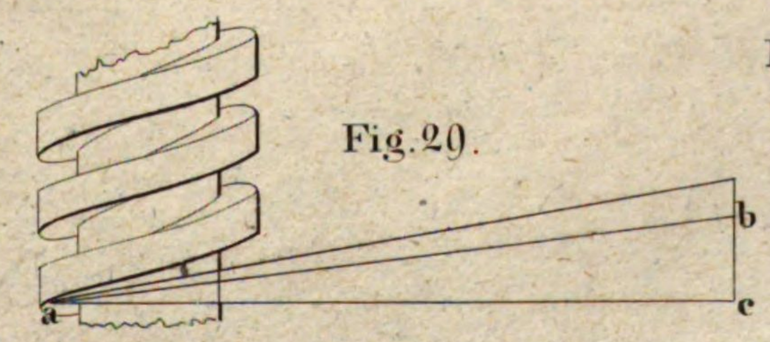
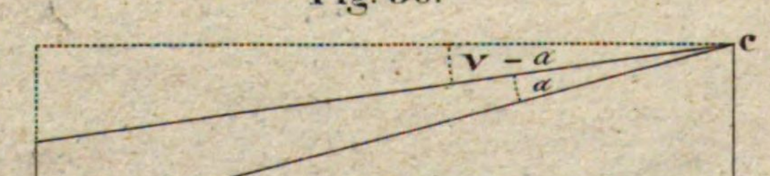
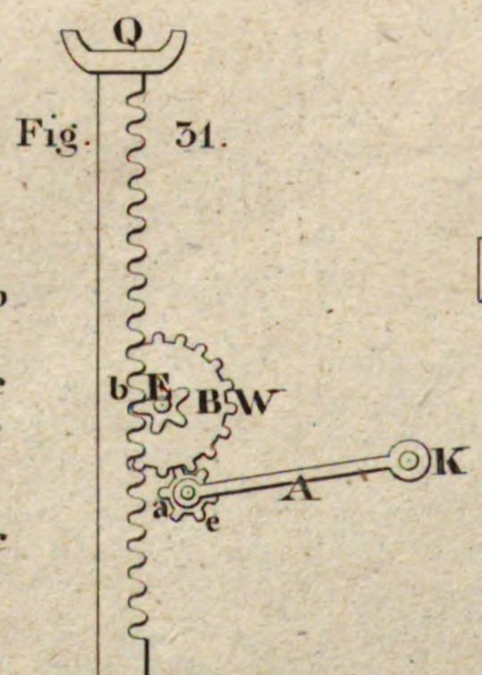
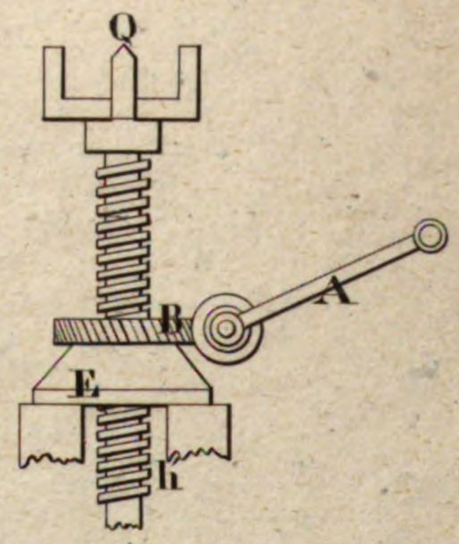
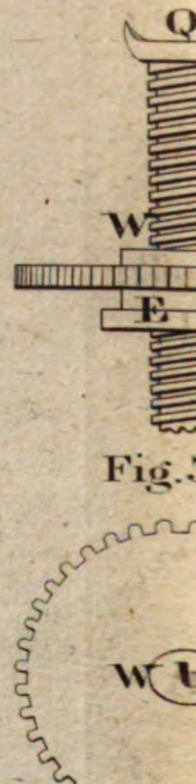


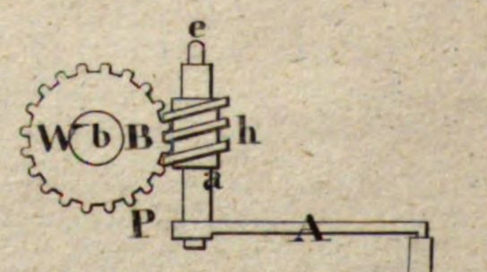
Fig. 30.

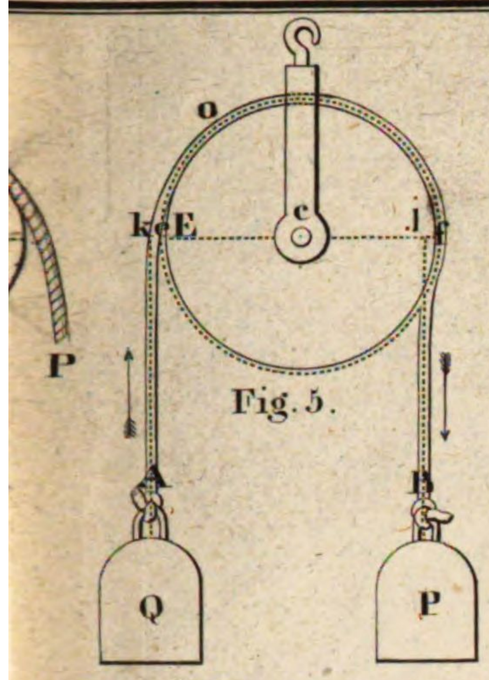












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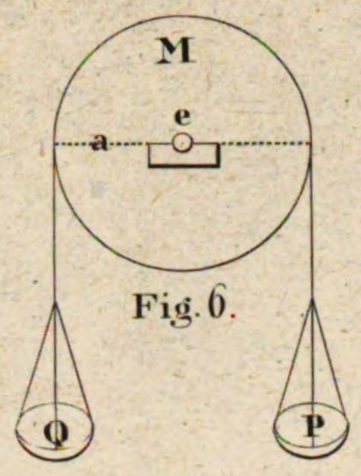

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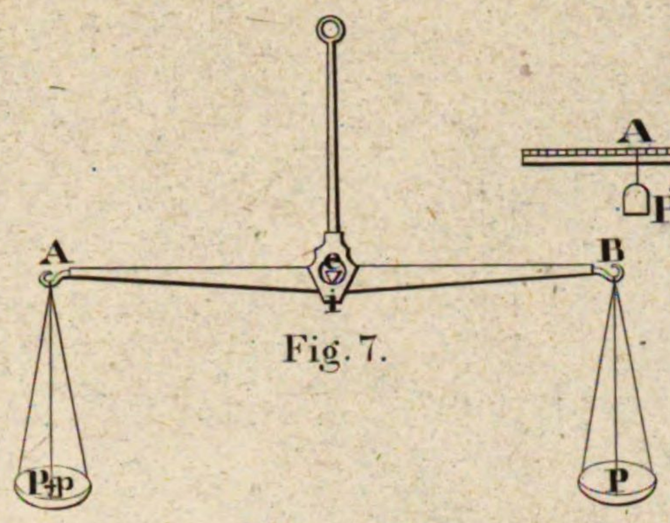

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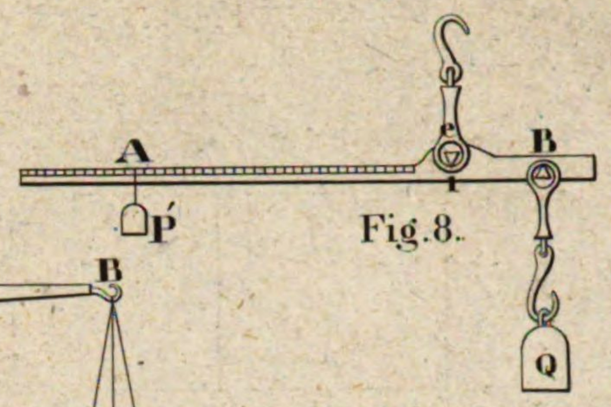

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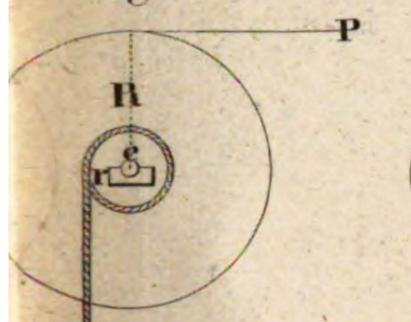

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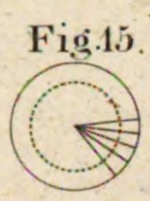

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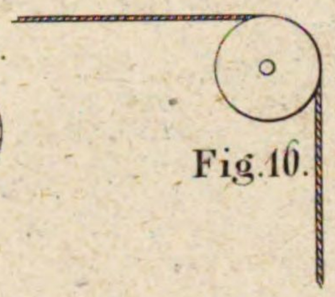

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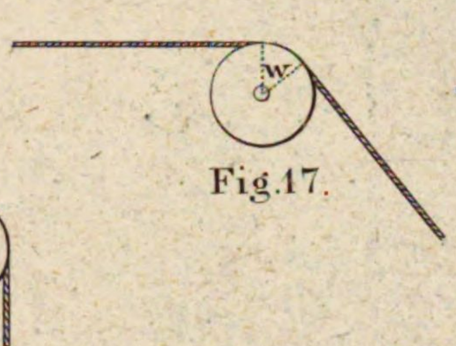

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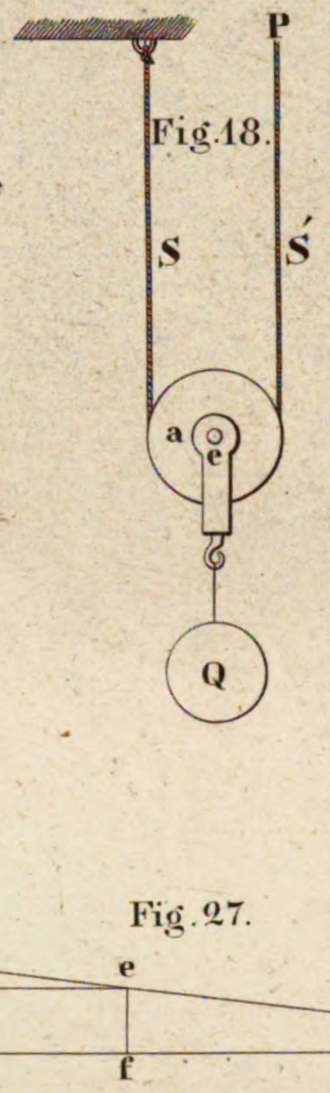

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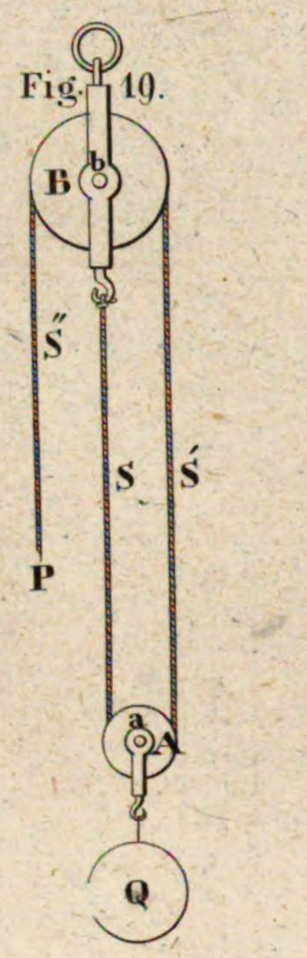

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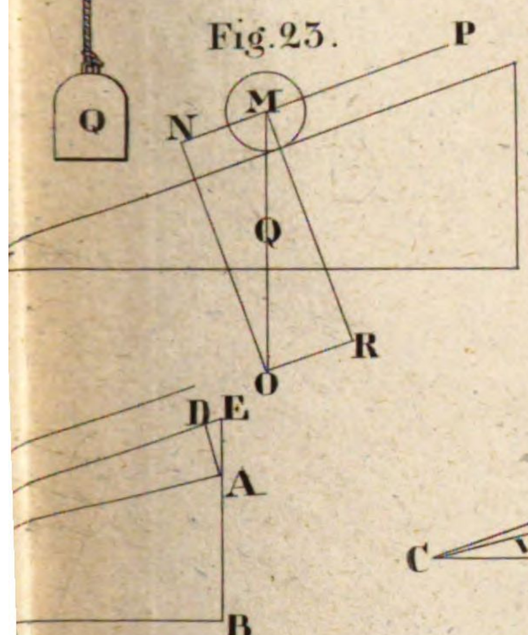

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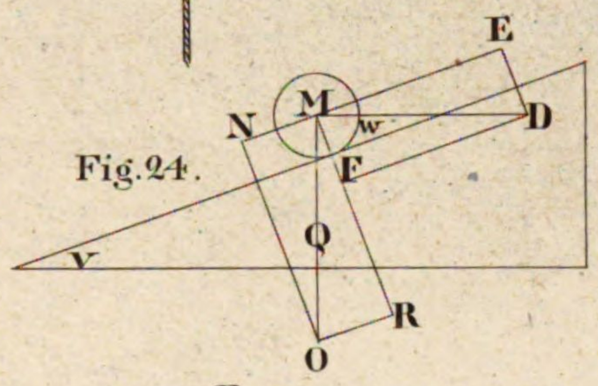

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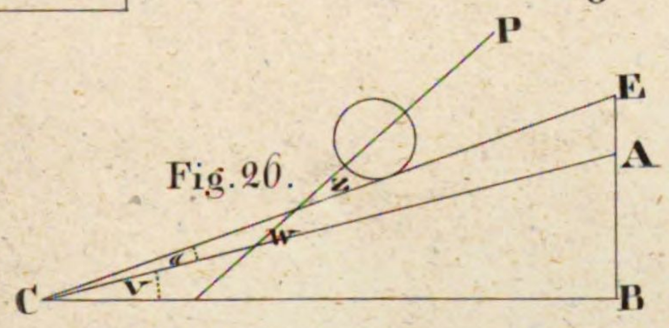

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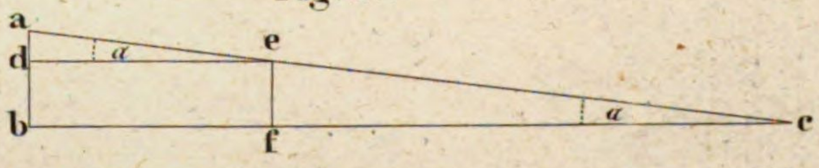

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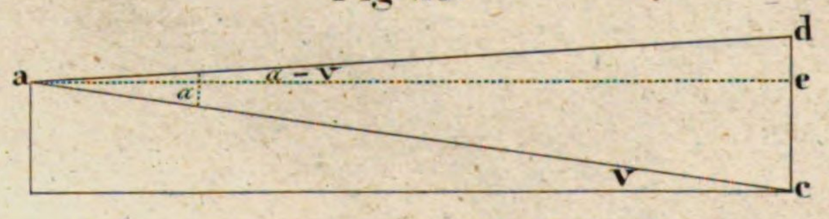

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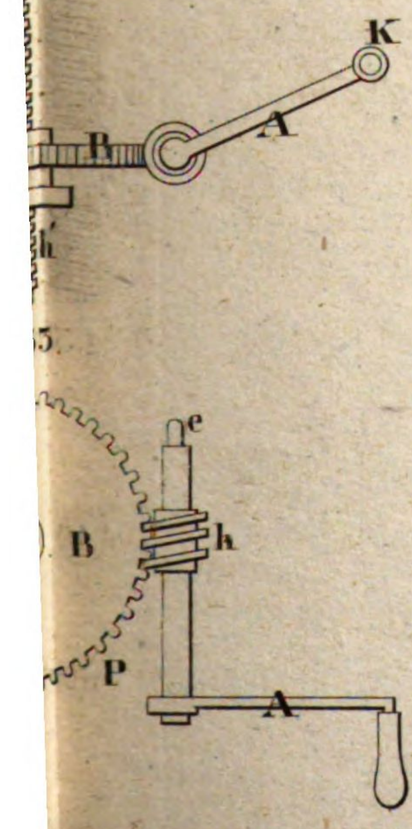

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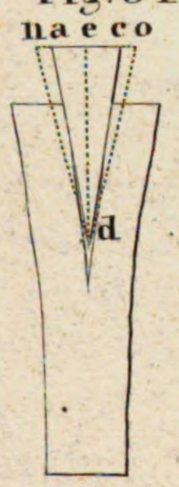

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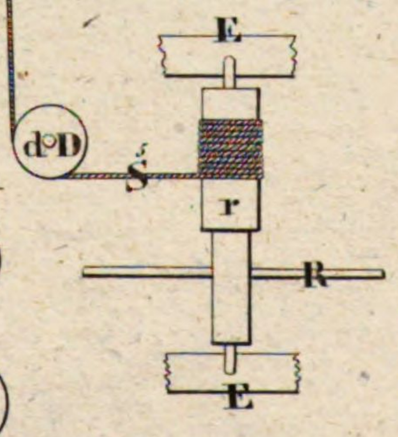

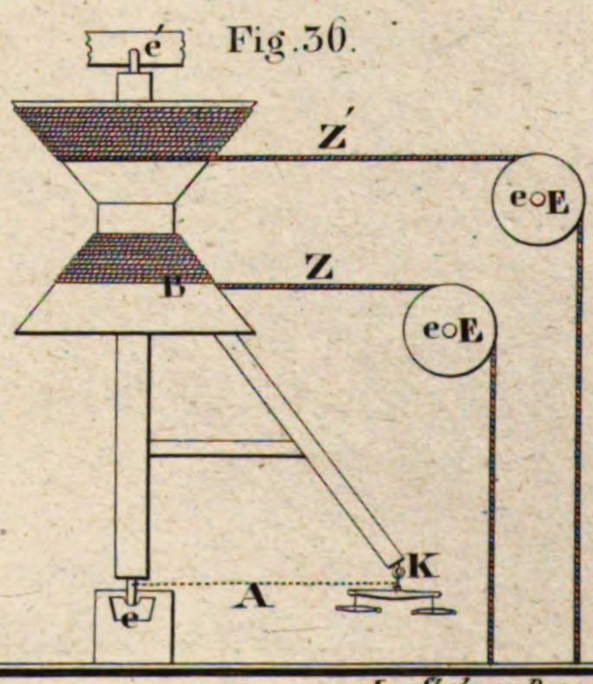

Fig. 36.

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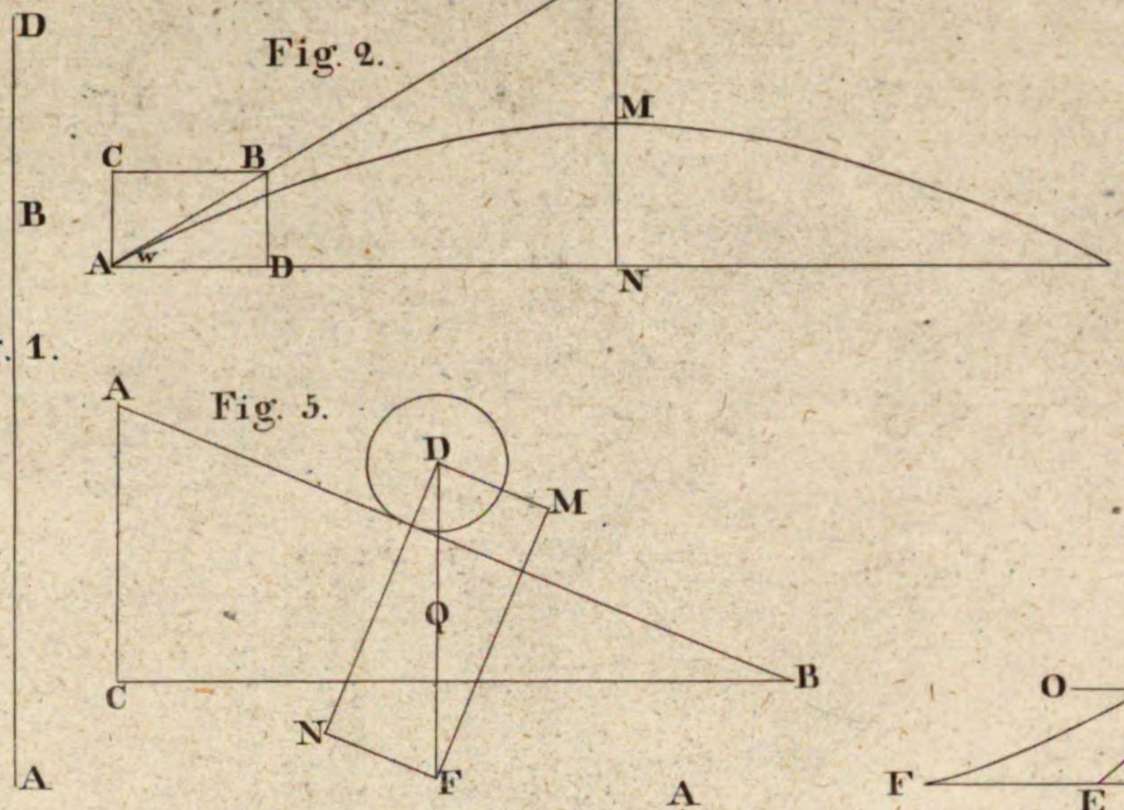

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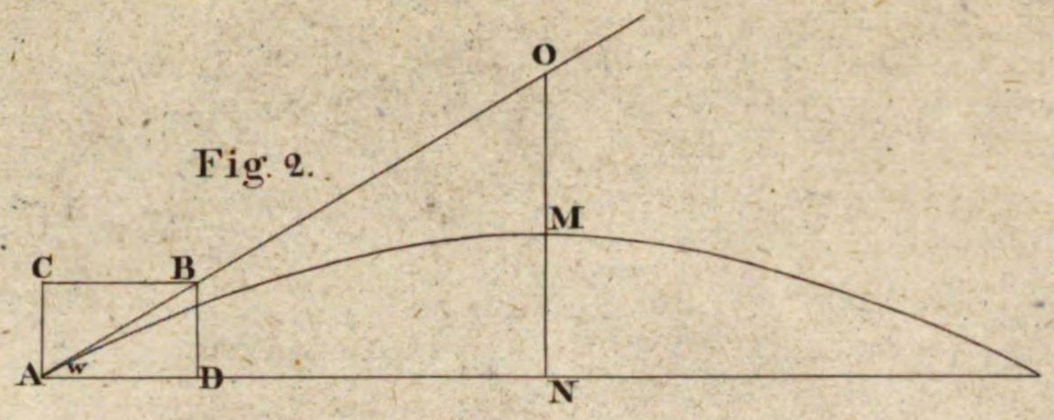

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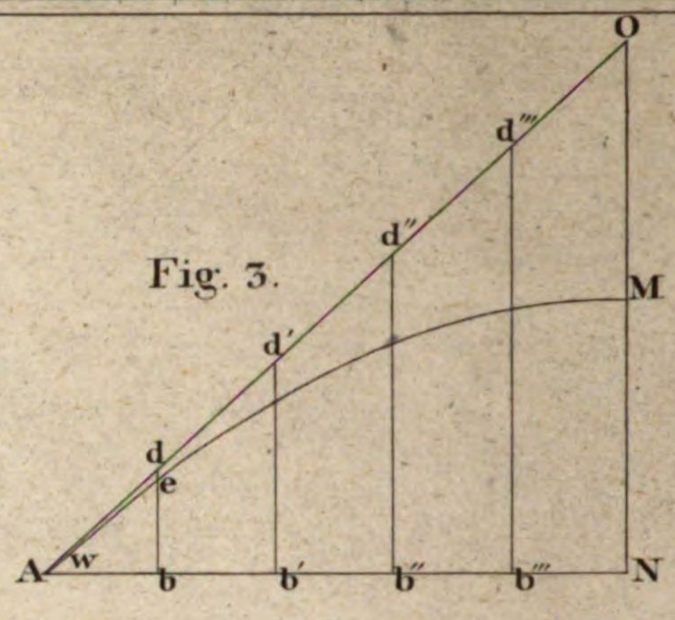

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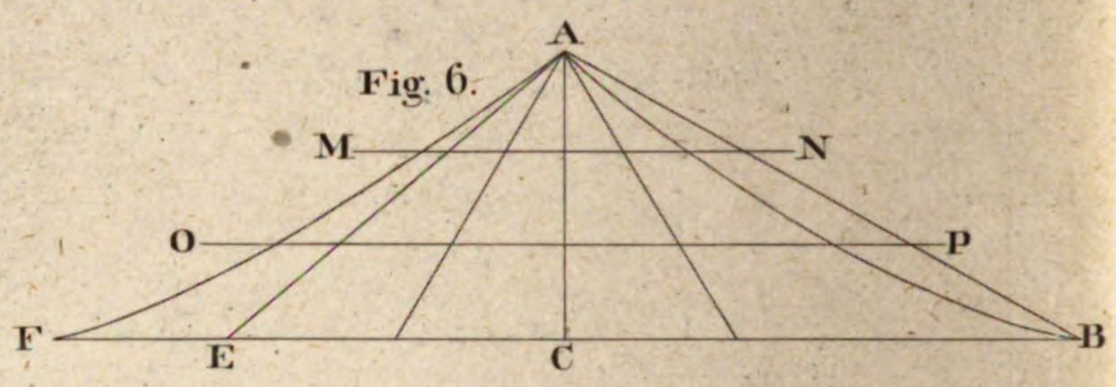

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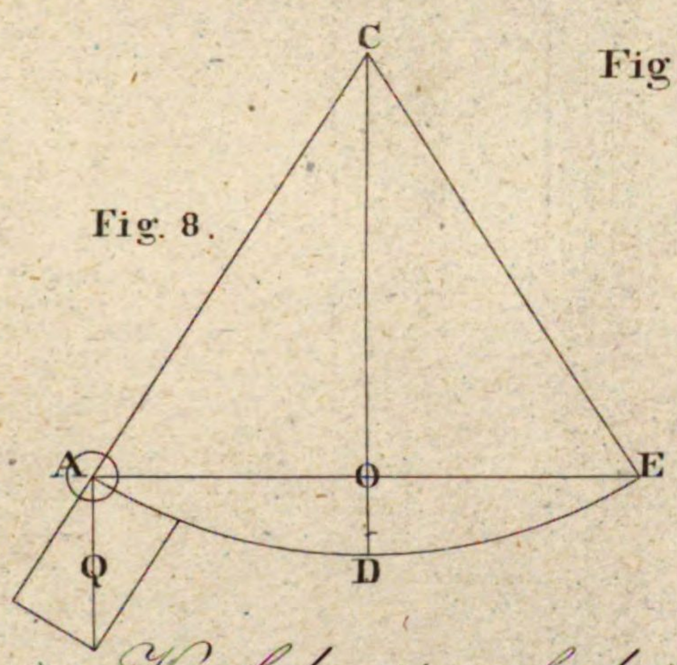

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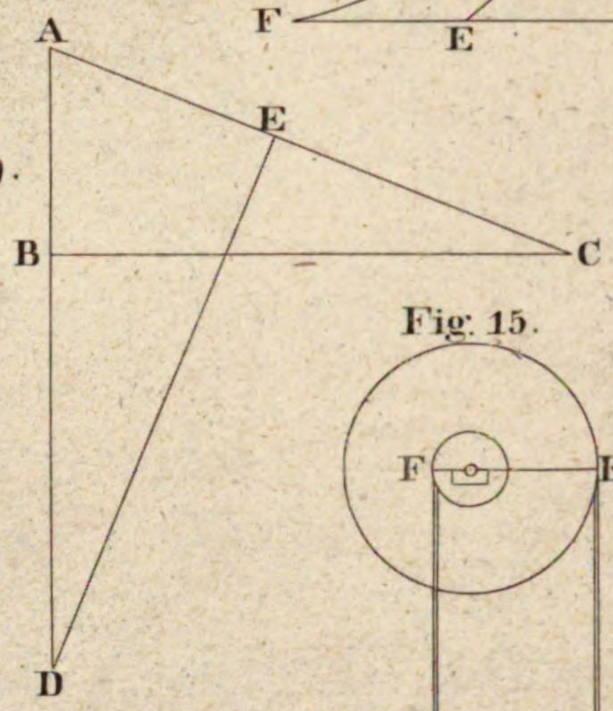

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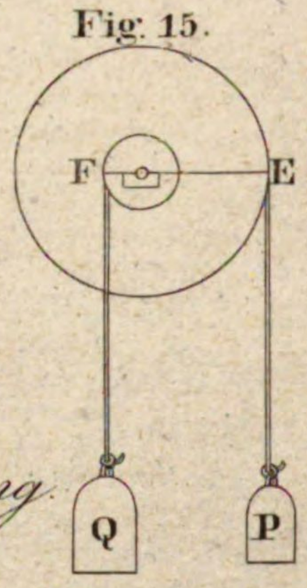

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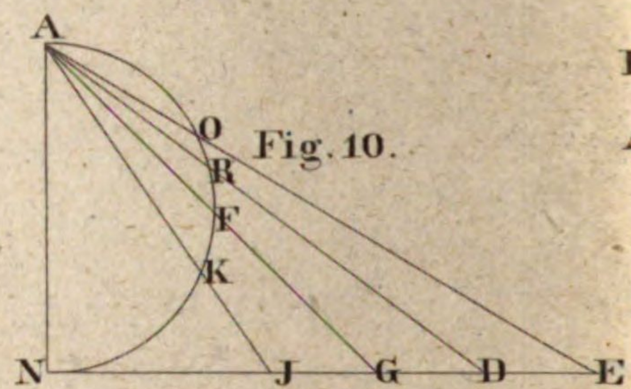

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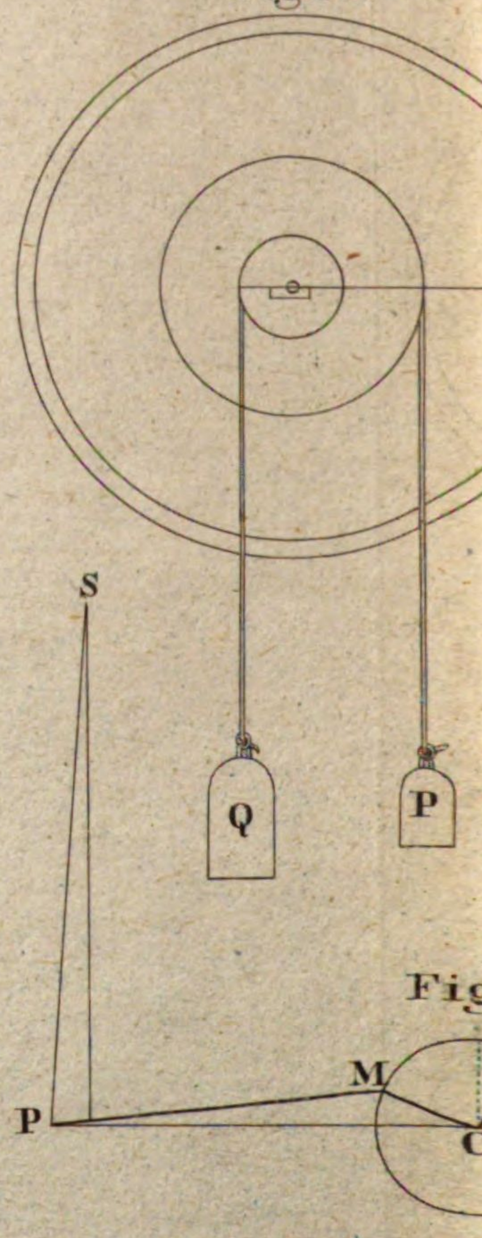
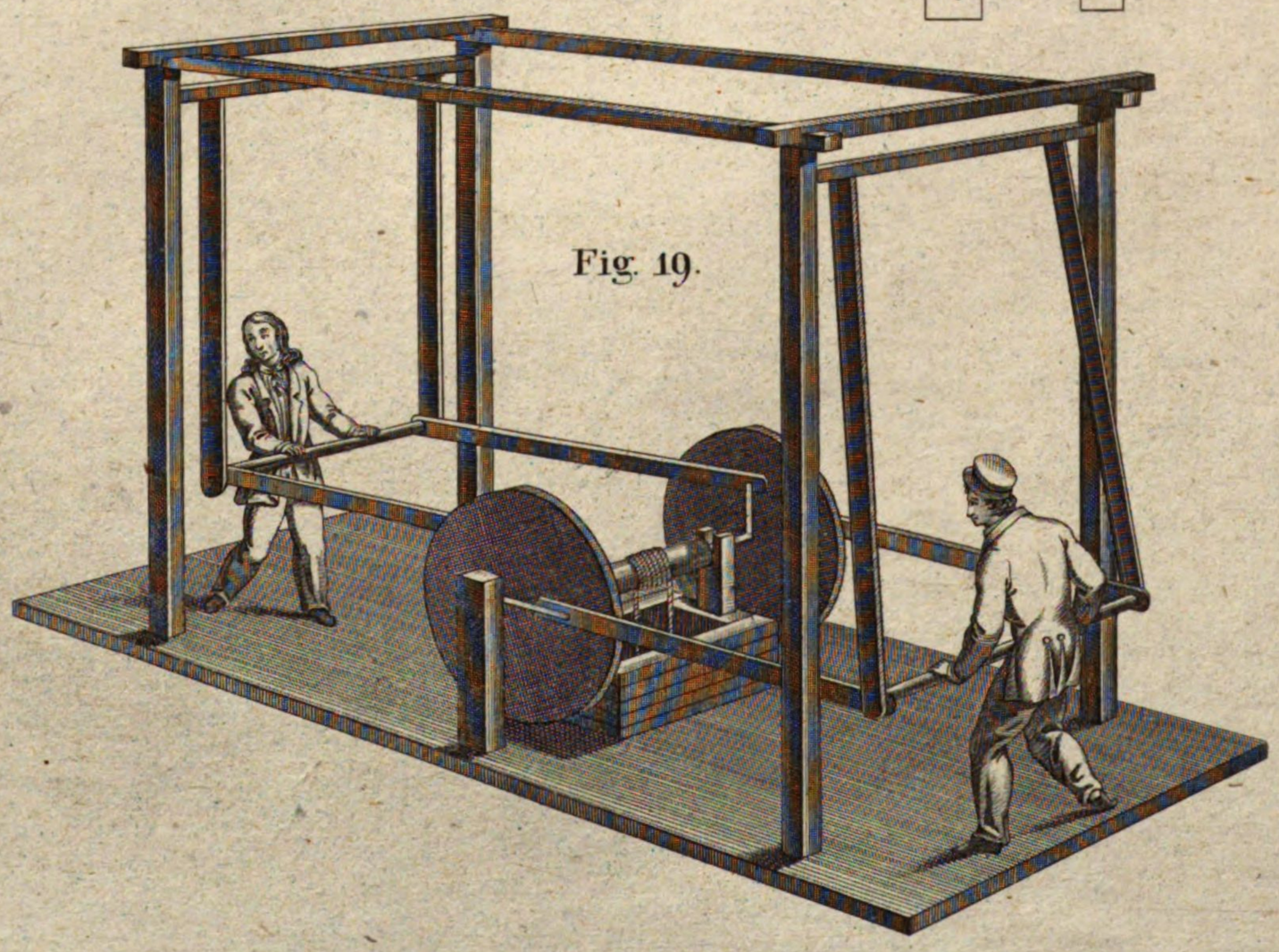


Kurbel mit wechselseitiger Bewegung.

Fig. 19.



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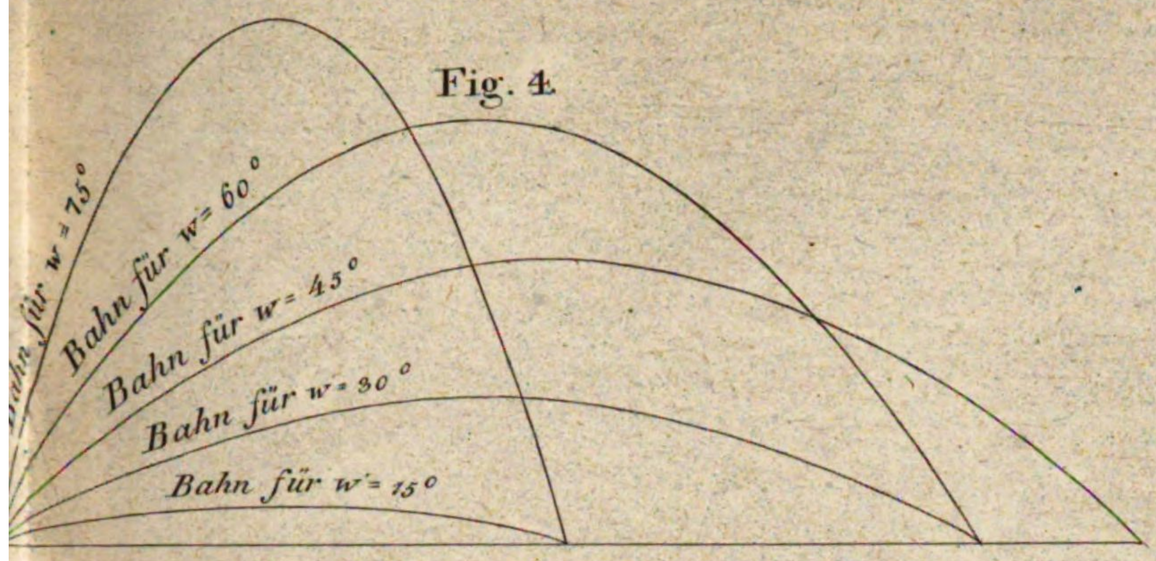

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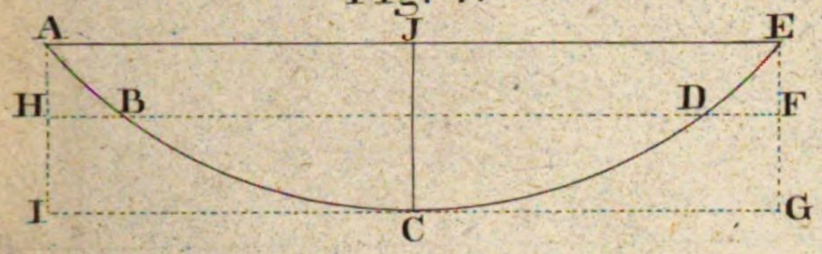

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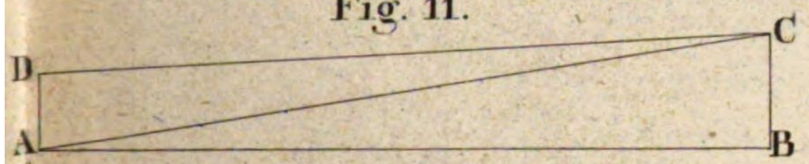

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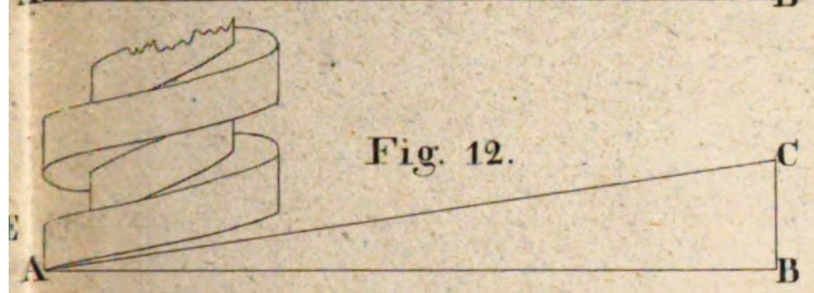

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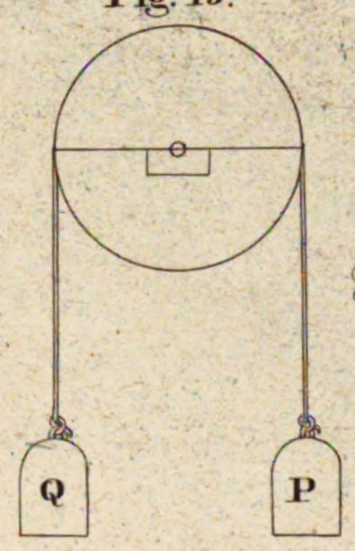

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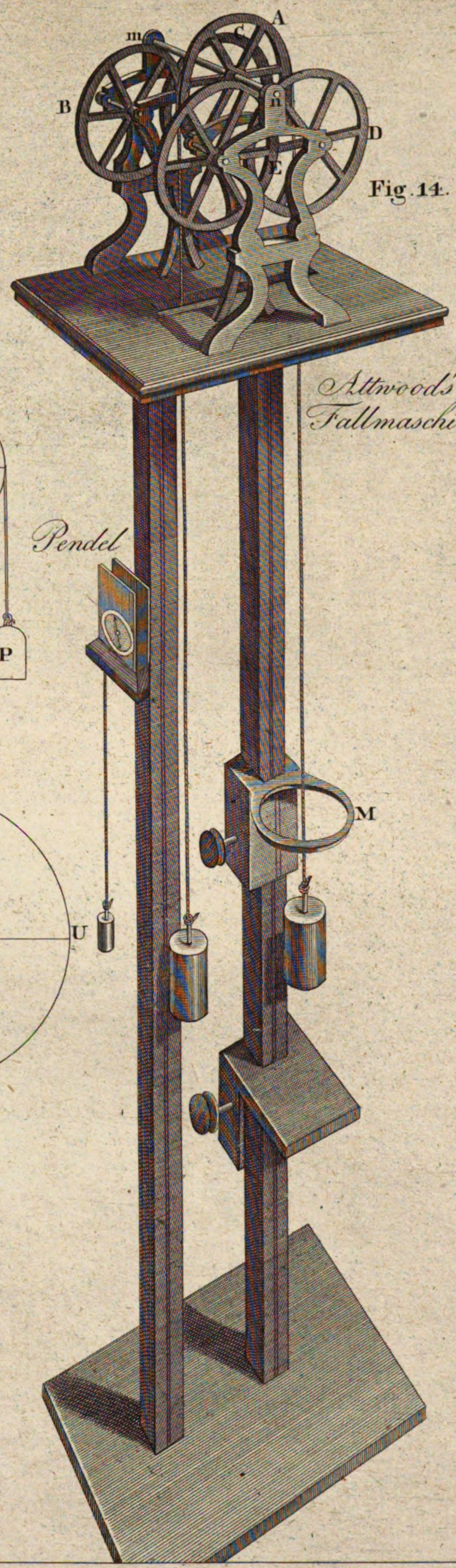

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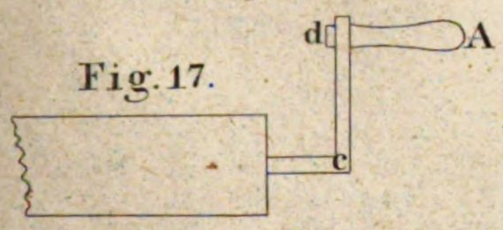

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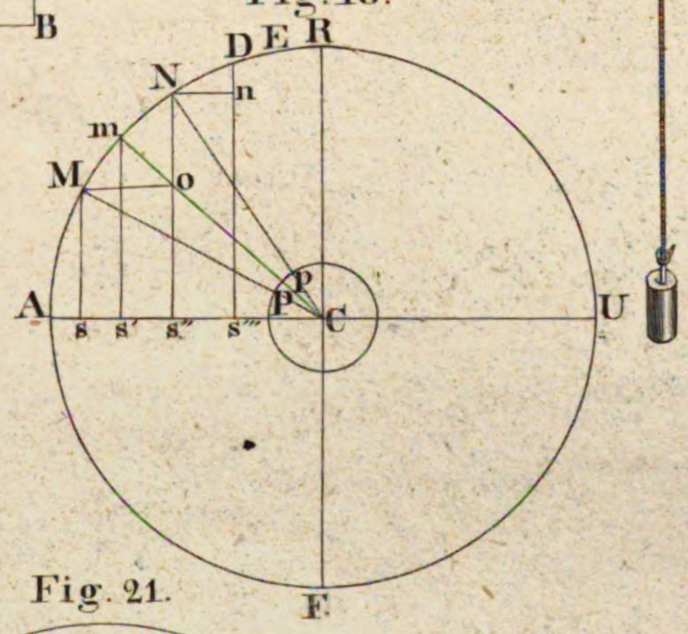

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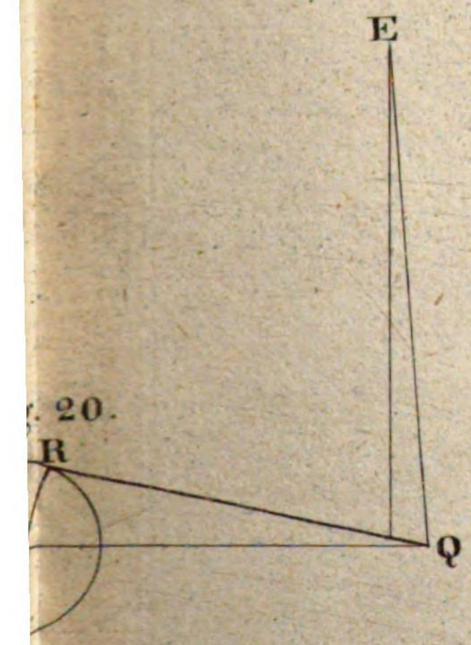

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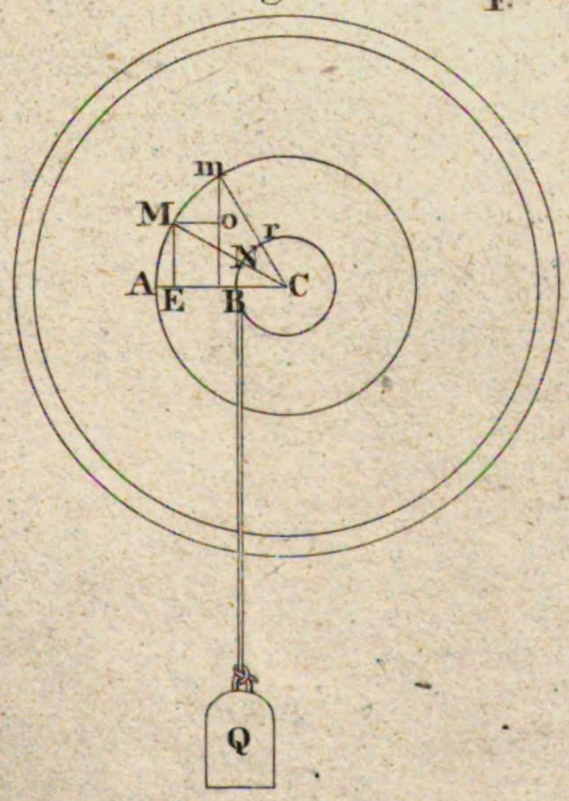

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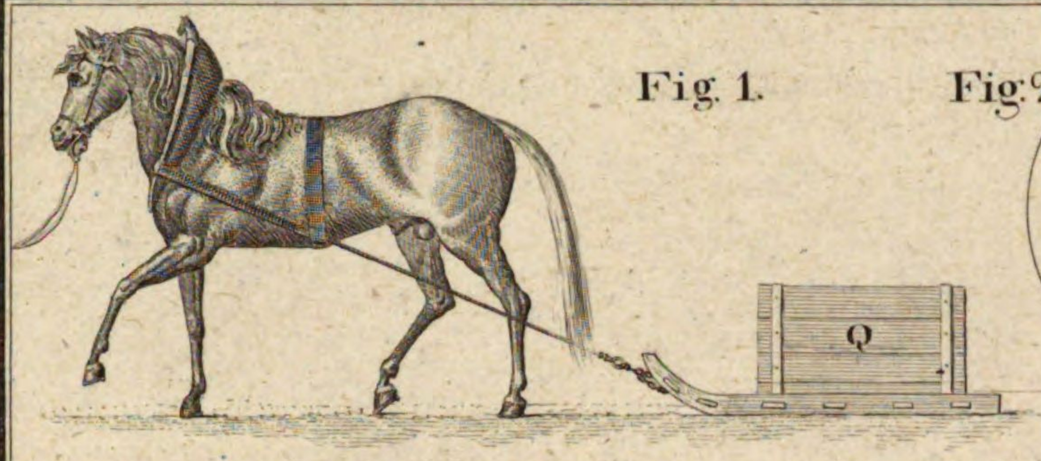

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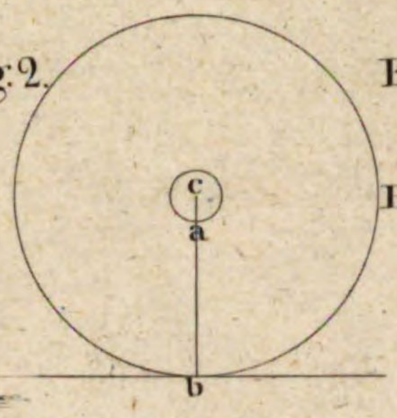

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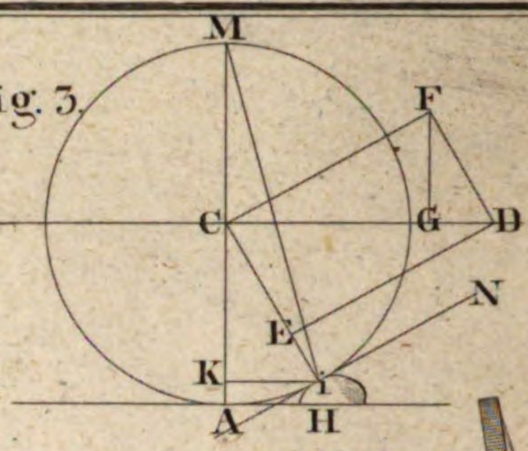

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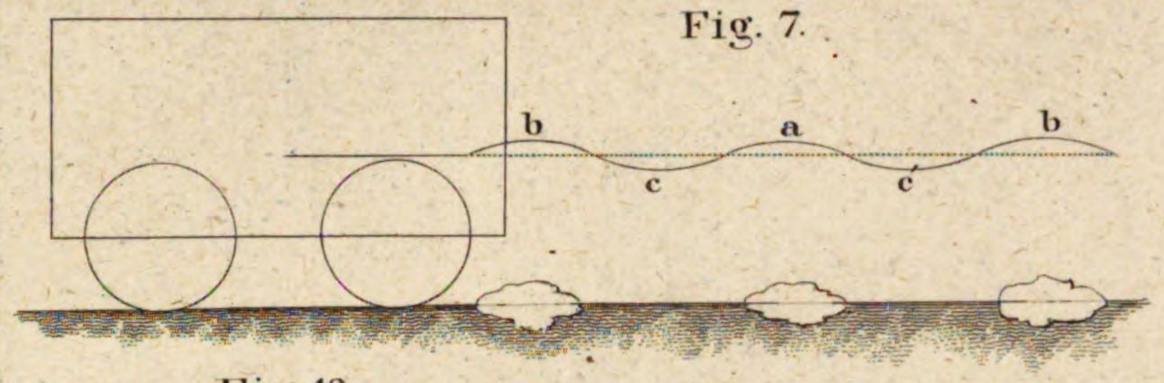

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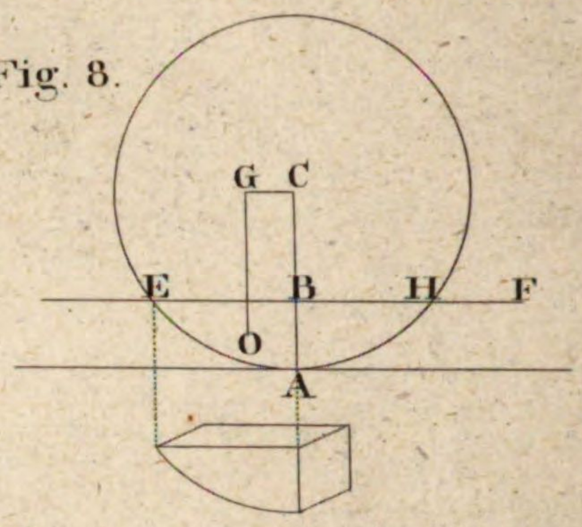

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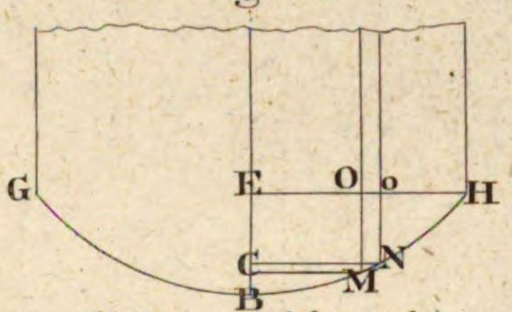
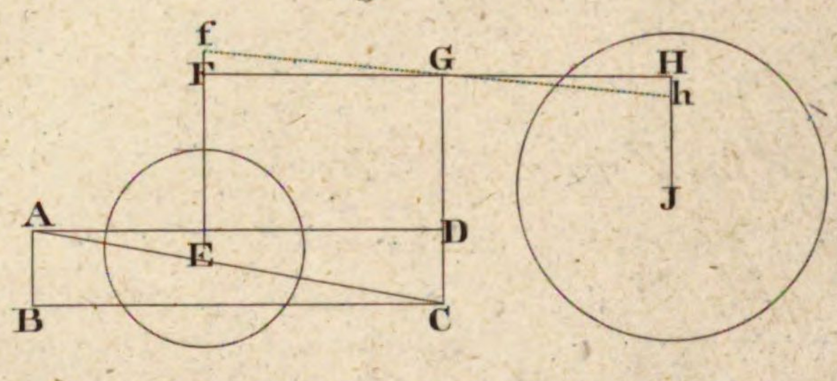


Hölzernes Kaleſsenrad mit eiserner Achse.

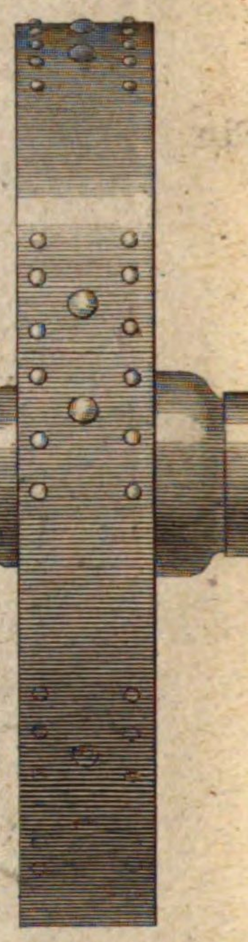
Fig. 14.



Hölzer

Vordere Ansicht.

Fig. 15.



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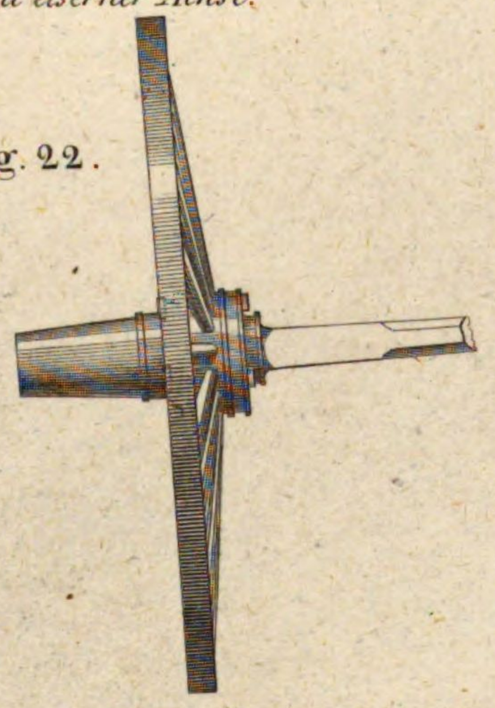

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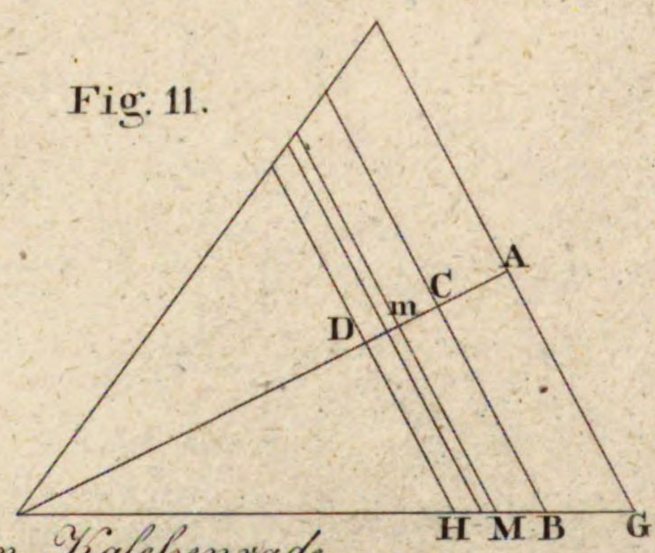


Eiserne Achse und Hülse bei einem Kaleſsenrade.

Längendurchschnitt.

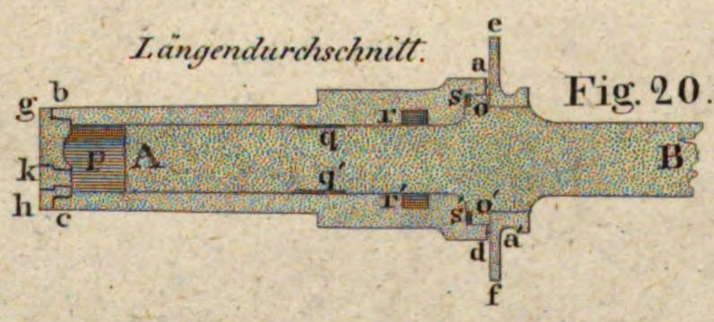


Fig. 20.

Vordere Ansicht.

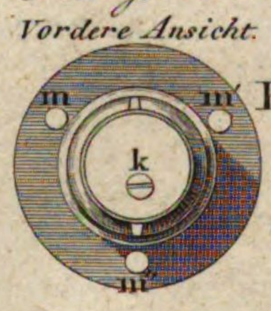


Fig. 21.

Querdurchschnitt.

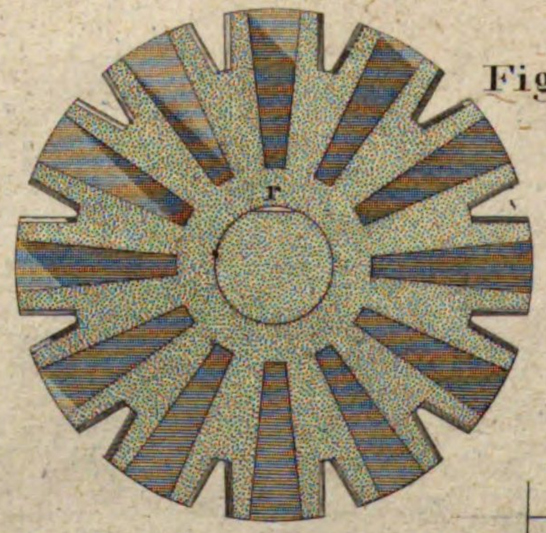


Fig. 23.

Längenansicht.

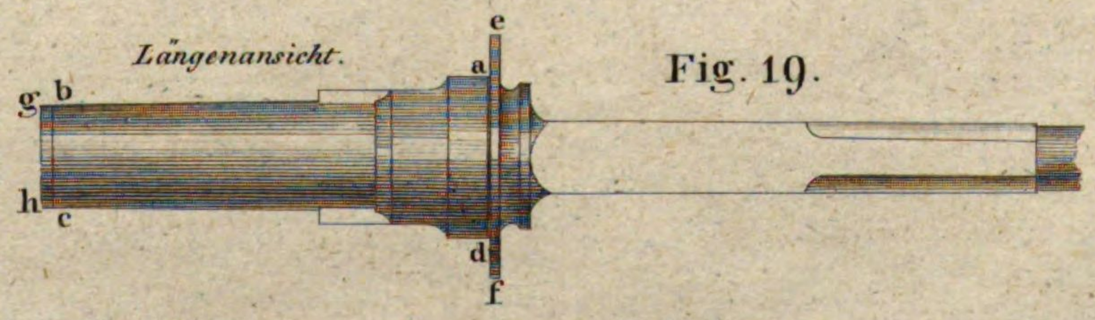


Fig. 19.

g. 4.

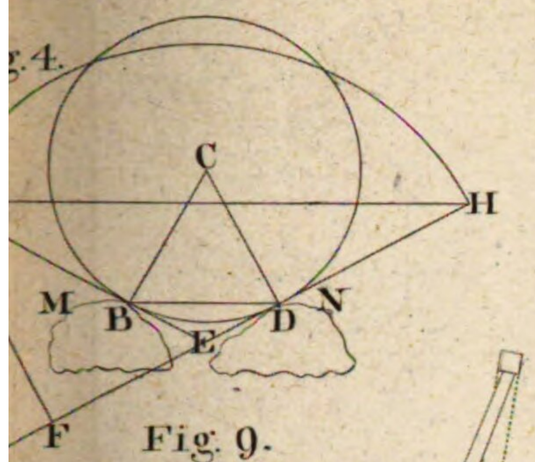
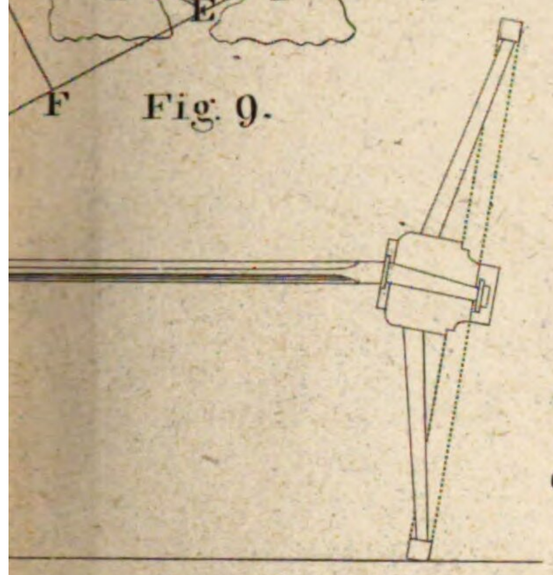


Fig. 9.



Englische Steinbahn.

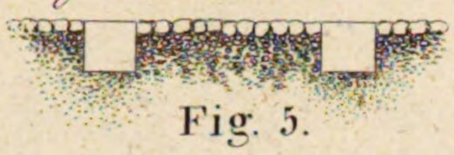


Fig. 5.

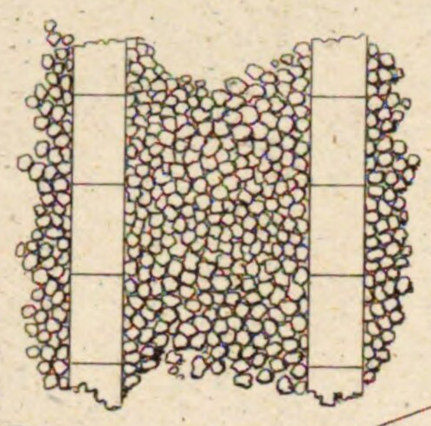
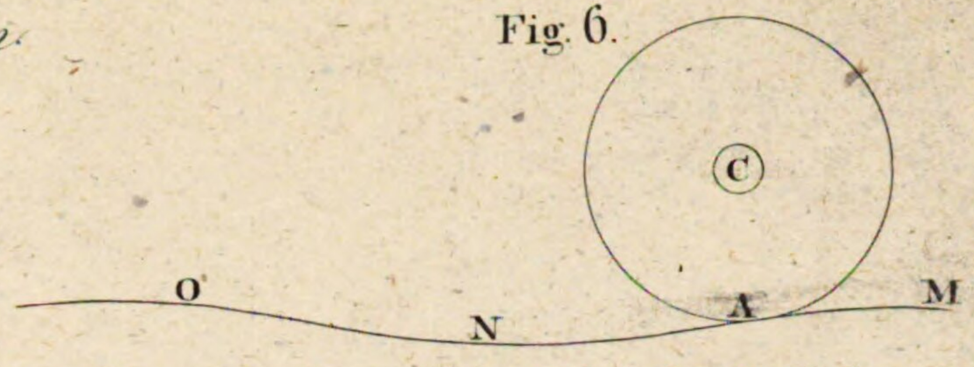


Fig. 6.



Gußeisernes Rad eines Eisenbahnwagens auf der Manchester und Liverpool Bahn.

Fig. 10.

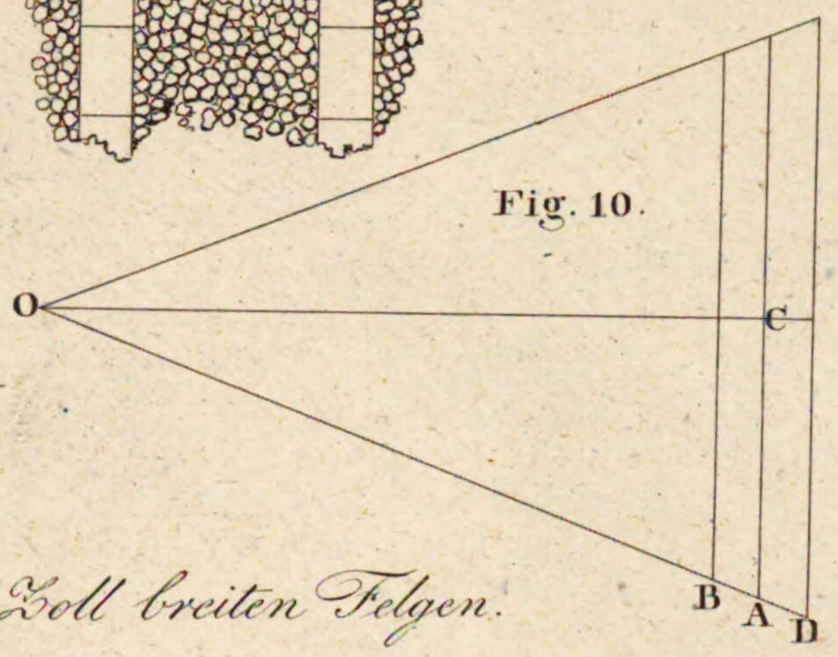
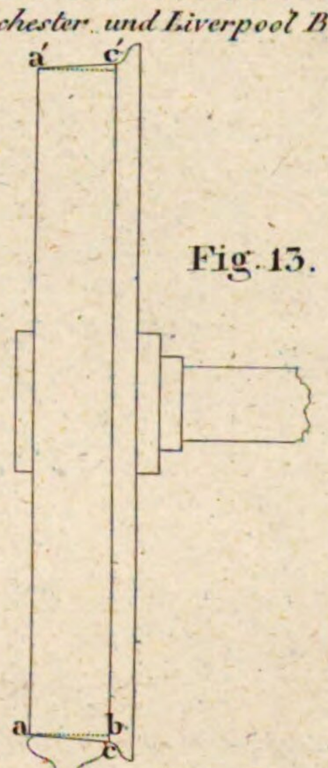


Fig. 13.

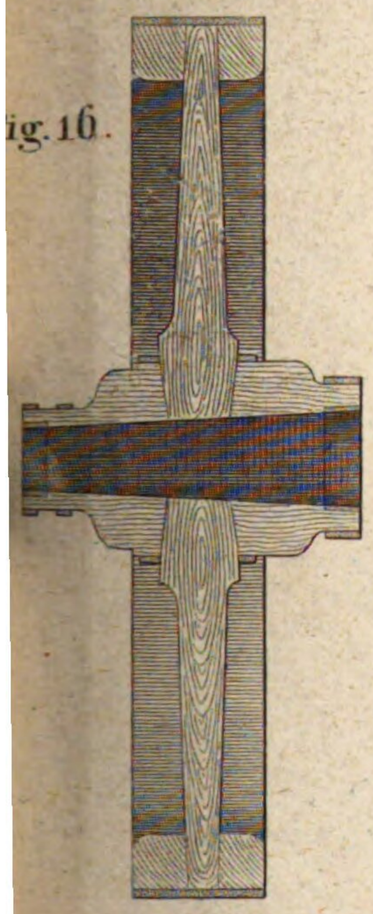


Längendurchschnitt einer Felge samt Speiche.

Lastwagenrad mit 6 Zoll breiten Felgen.

Durchschnitt.

ig. 16.



Seitenansicht.

Fig. 17.

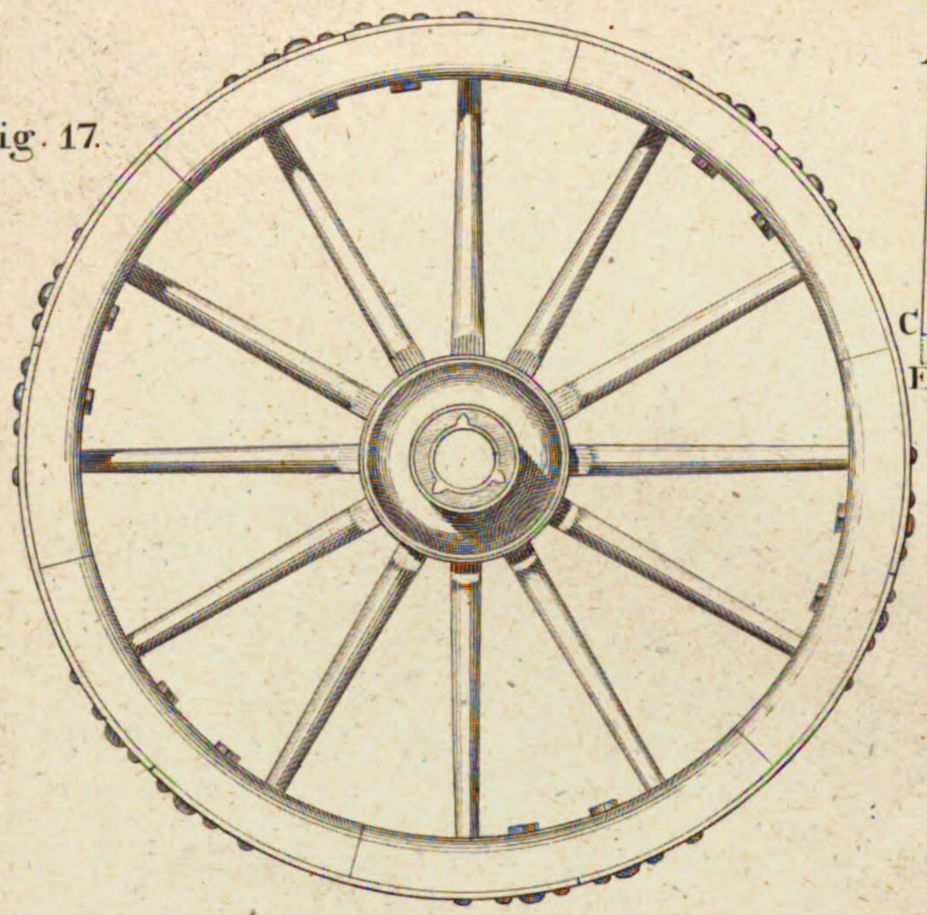
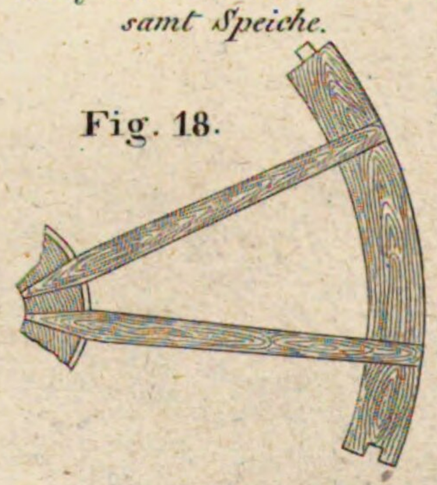


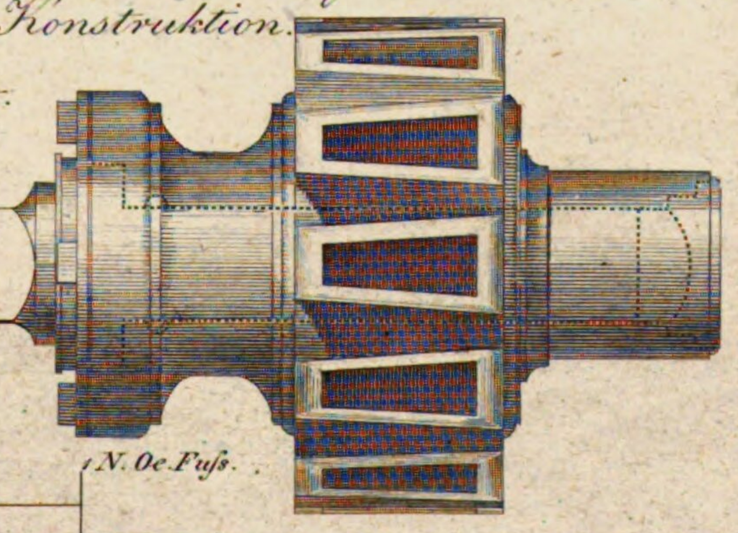
Fig. 18.



erne Nabe und Achse für ein Lastwagenrad nach englischer Konstruktion.

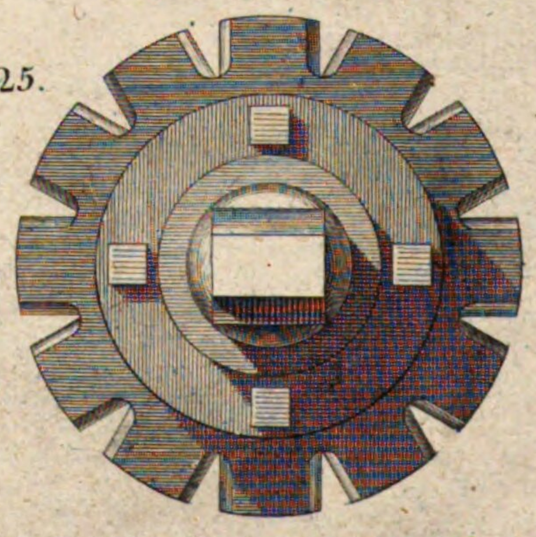
Längenansicht.

Fig. 24.

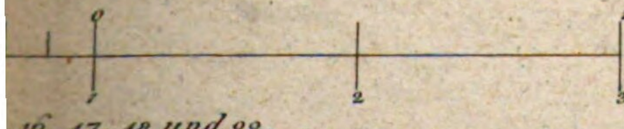


Vordere Ansicht.

Fig. 25.



Maasstab zu
20, 21, 23, 24 und 25.

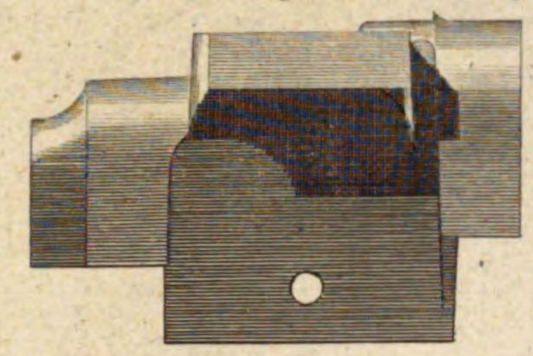


16, 17, 18 und 22.

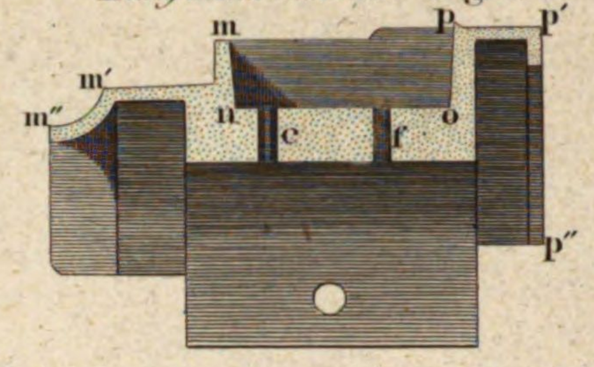
Jos. Skala sc. Prage 1831.

Achsenlager bei den Wägen der Manchester und Liverpool

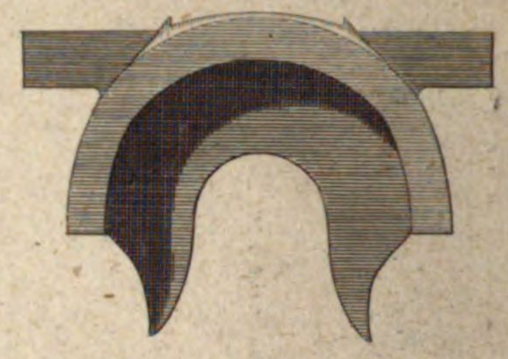
Längenansicht. **Fig. 1.**



Längendurchschnitt. **Fig. 2.**

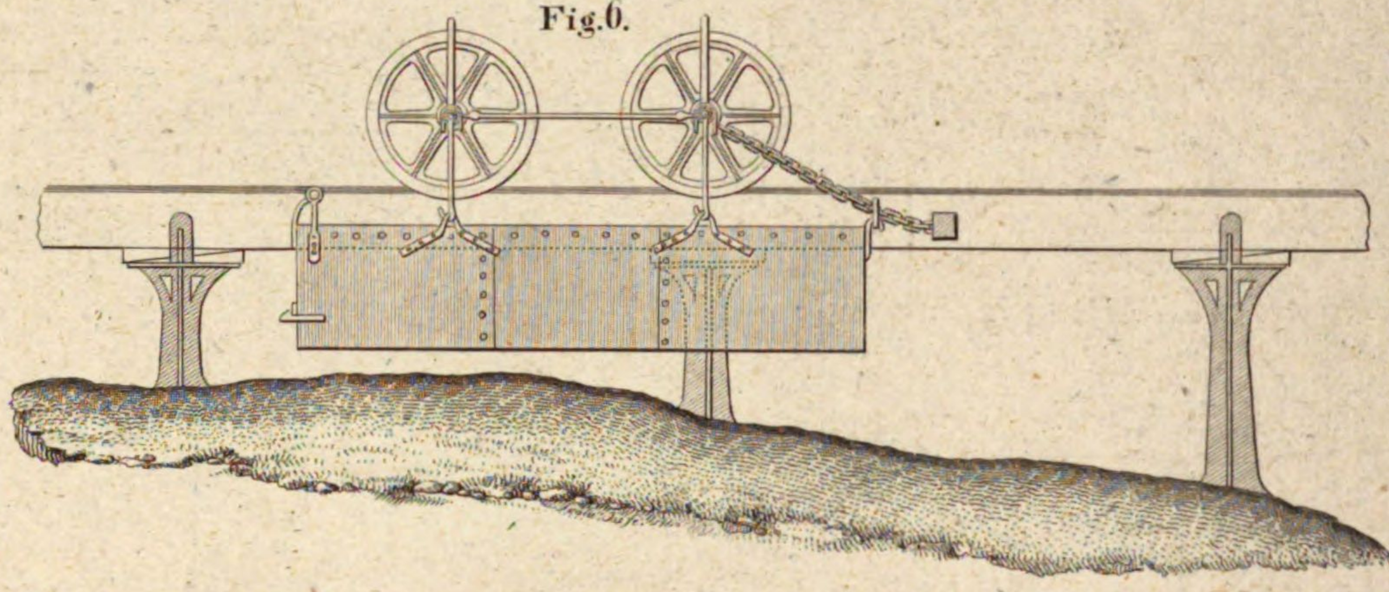


Vordere Ansicht vom Rade aus.
Fig. 3.

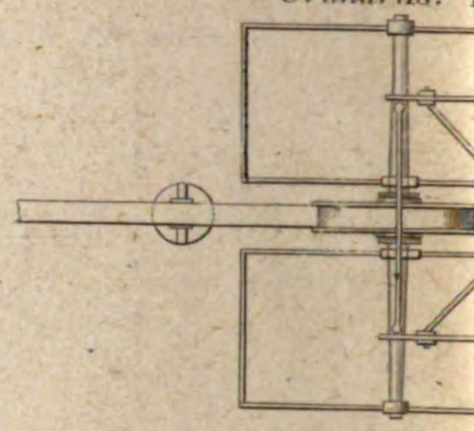


Palmersche Eisenbahn.

Längenansicht.
Fig. 6.

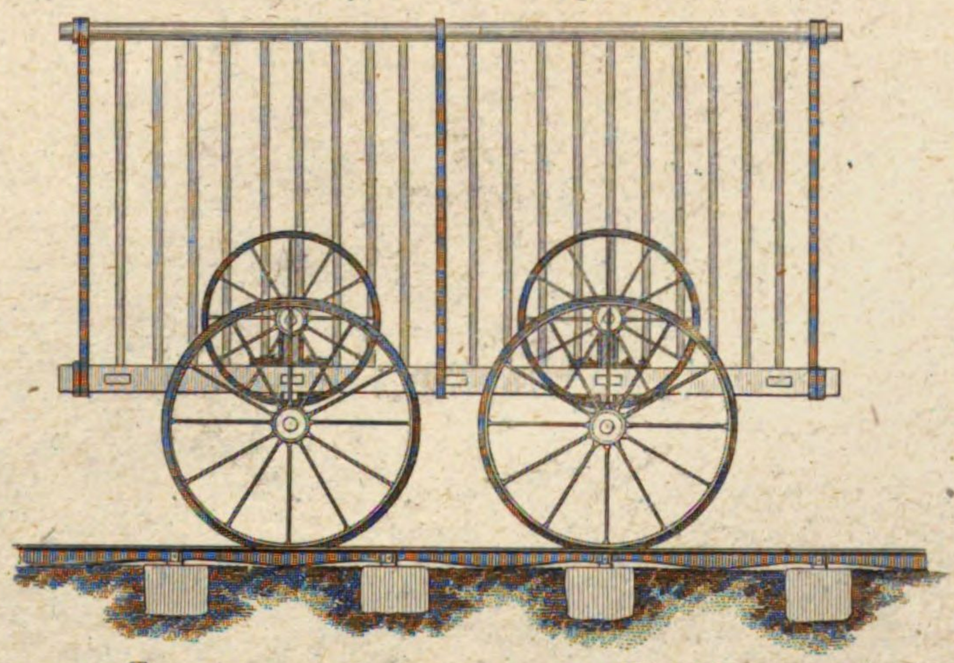


Grundriss.



Eisenbahnwagen mit doppelten Rädern.

Längenansicht. **Fig. 10.**



Vordere Ansicht. **Fig. 11.**

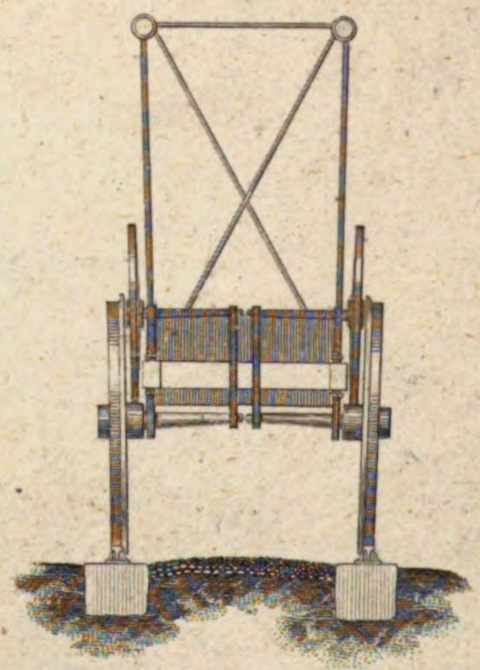
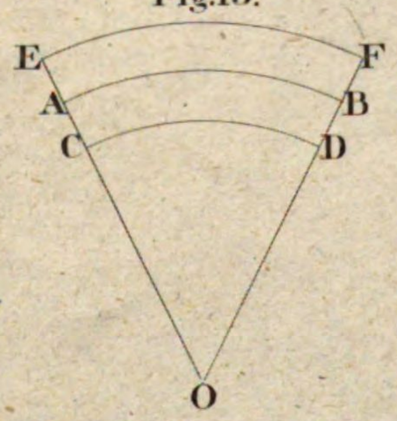
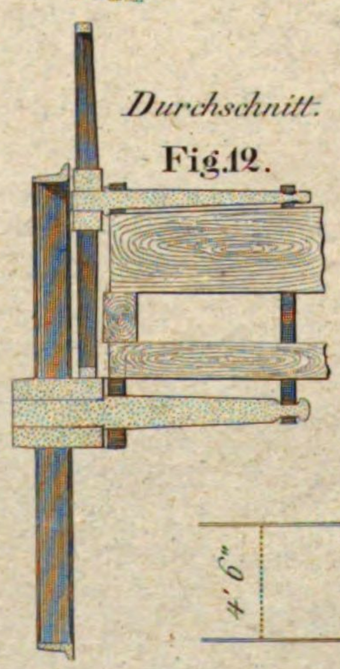


Fig. 13.



Durchschnitt.
Fig. 12.



Maafsstab für Fig.

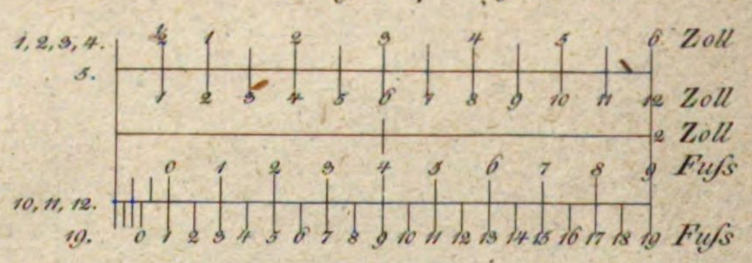
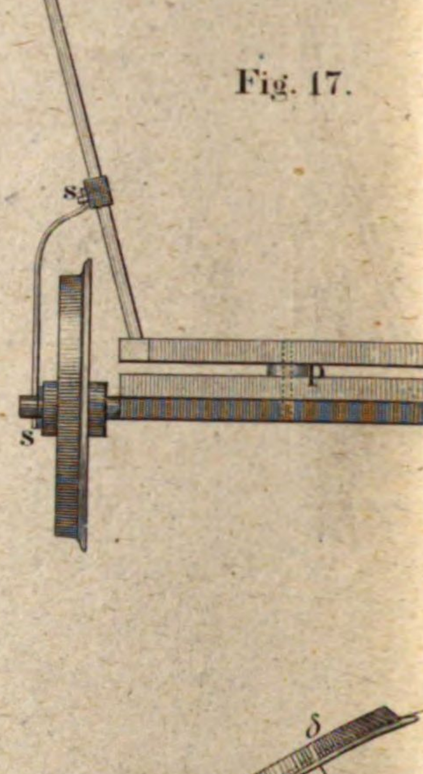


Fig. 17.



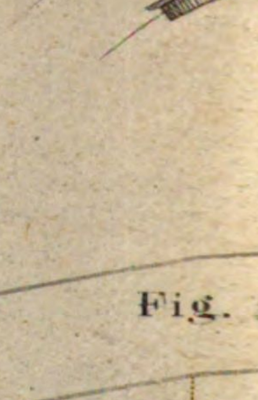


Fig.

…bahn.

Grundrifs. **Fig. 4.**

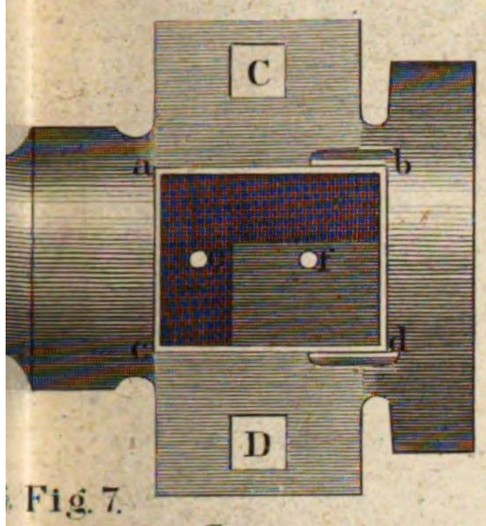
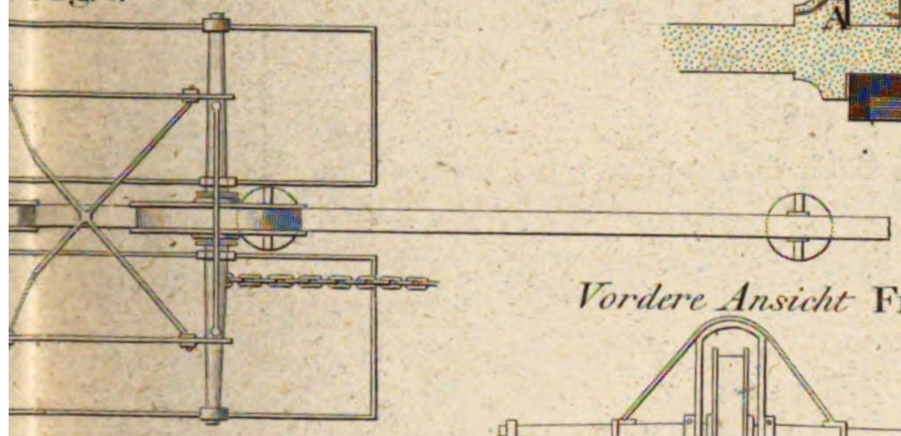
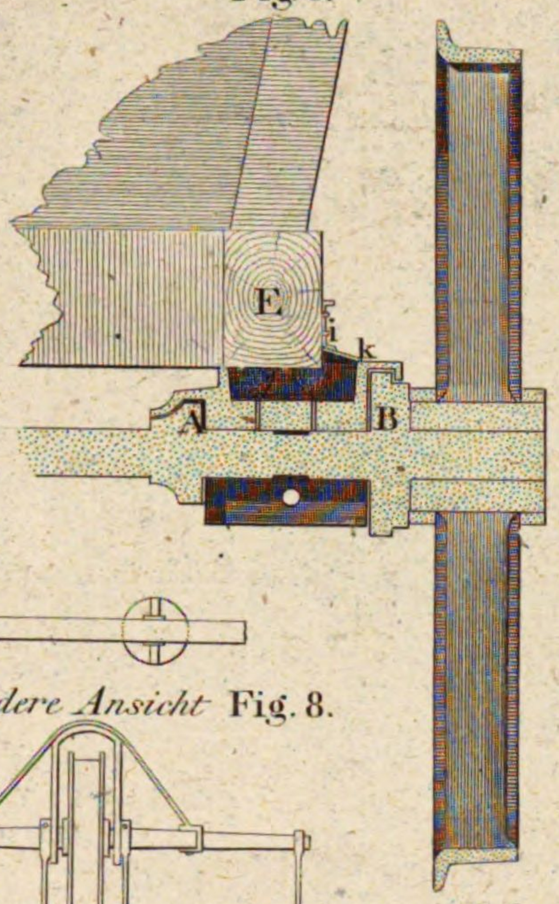


Fig. 7.

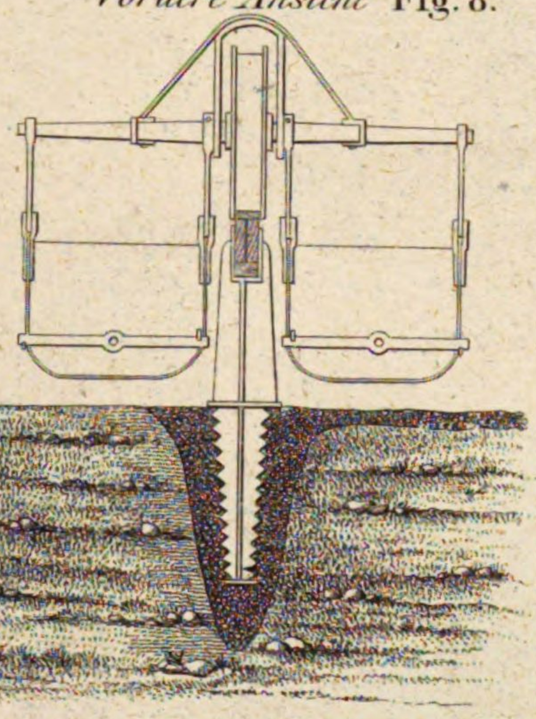


Verbindung des Lagers mit der Achse und dem Wagen.

Fig. 5.



Vordere Ansicht **Fig. 8.**



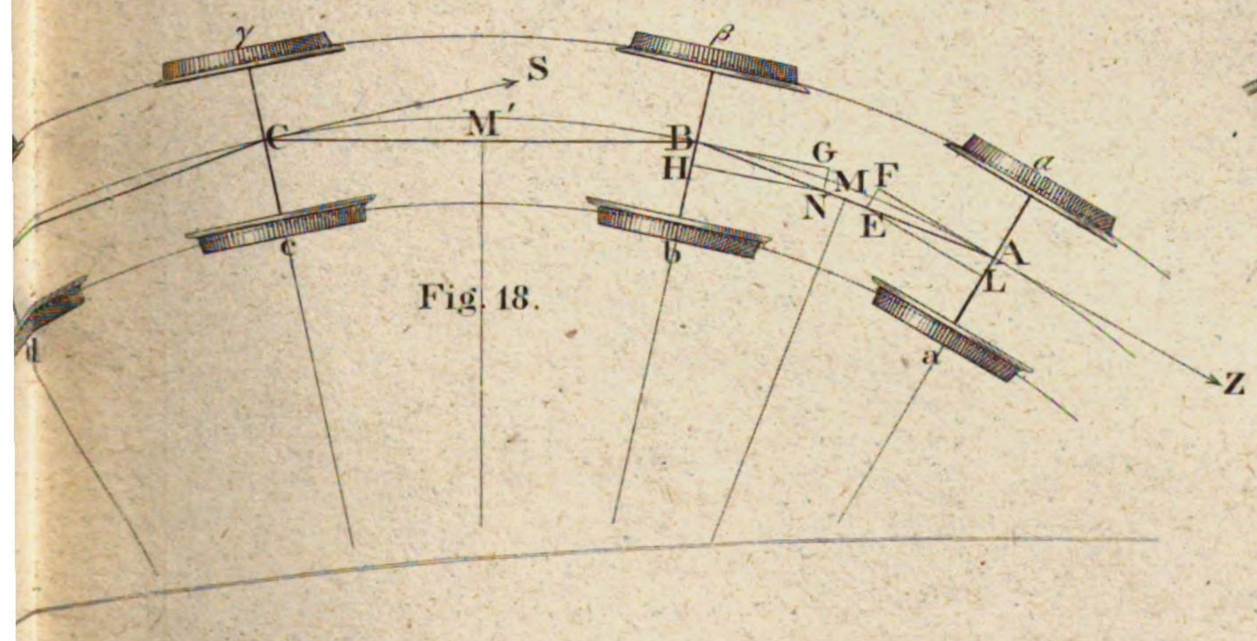
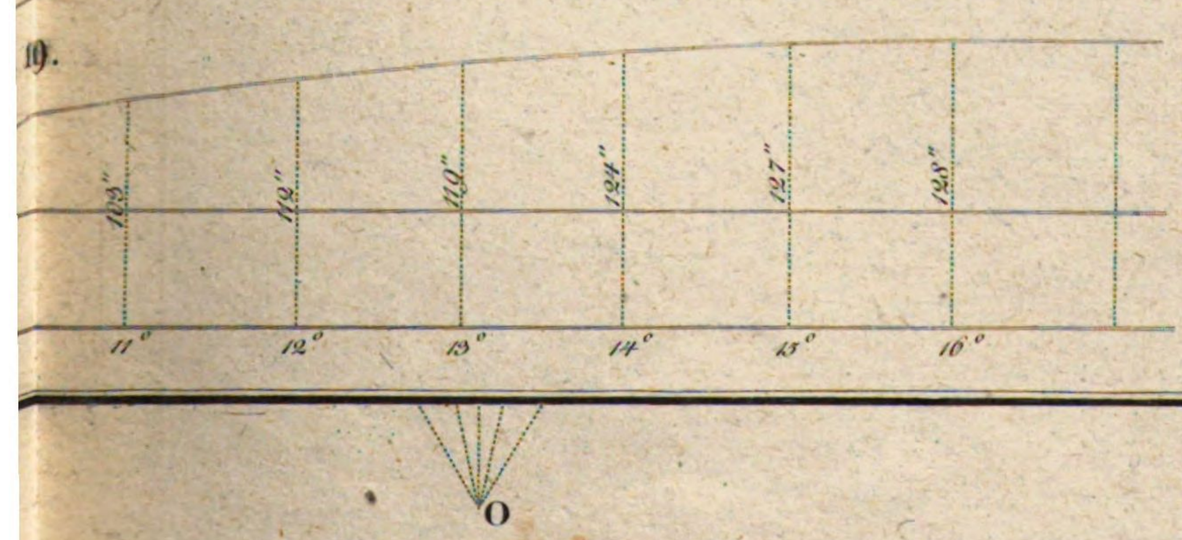


Fig. 18.



Roberts Apparat.

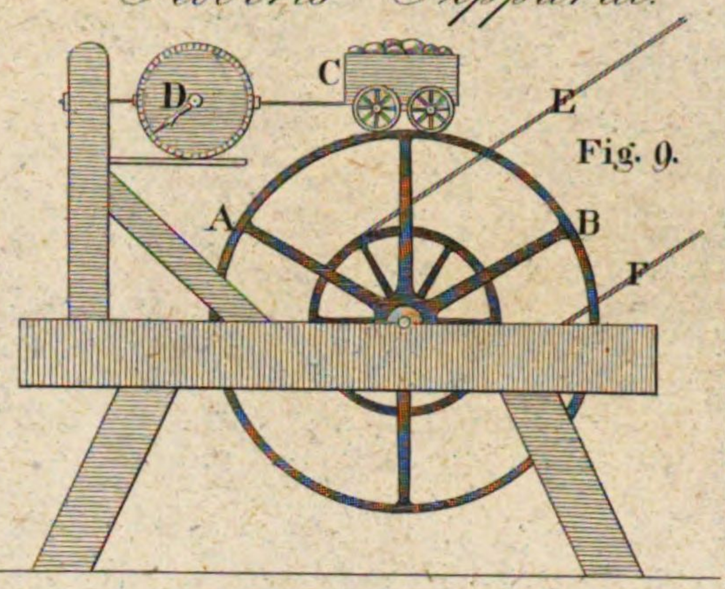


Fig. 9.

Fig. 14.

Fig. 10.

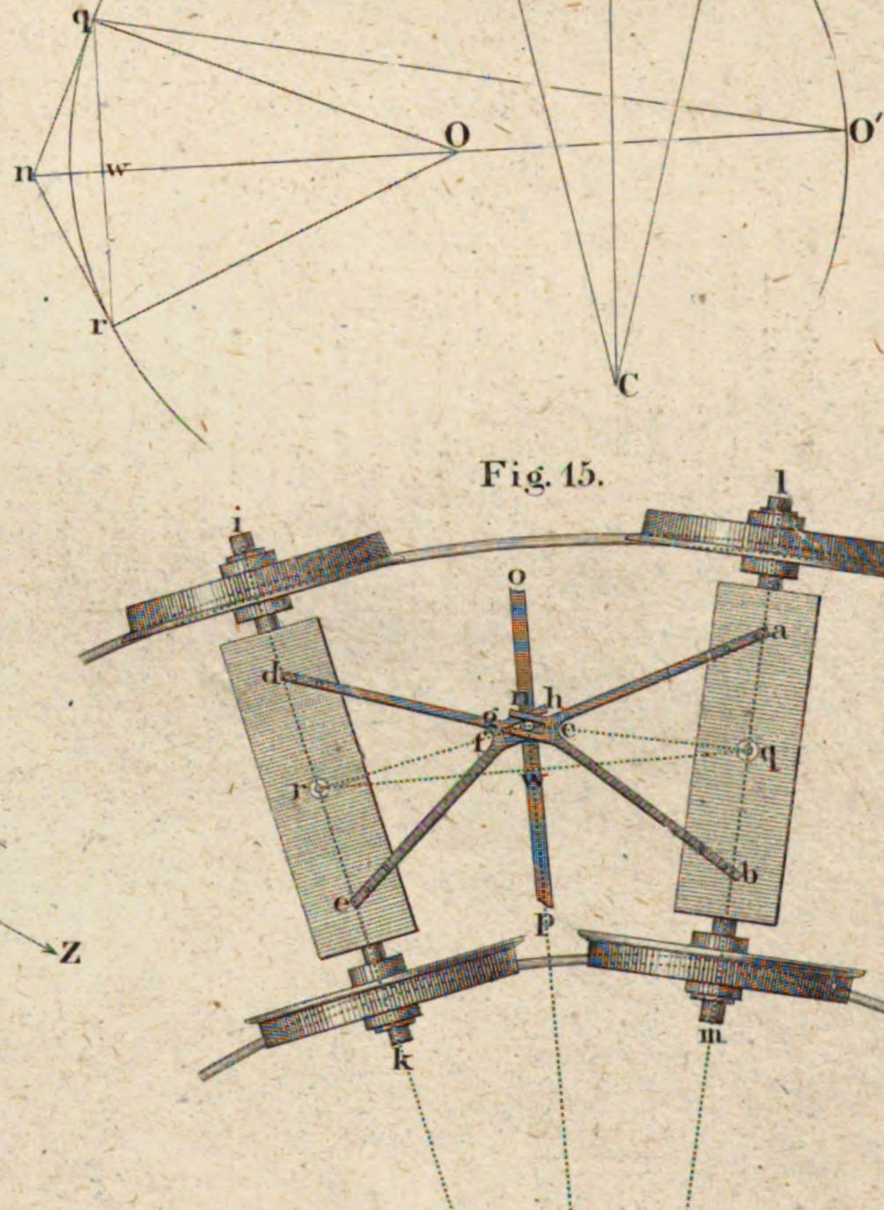
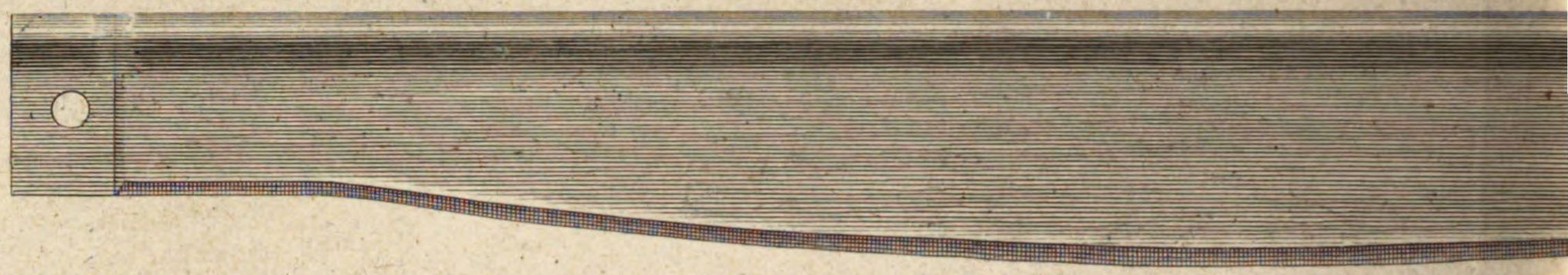


Fig. 15.

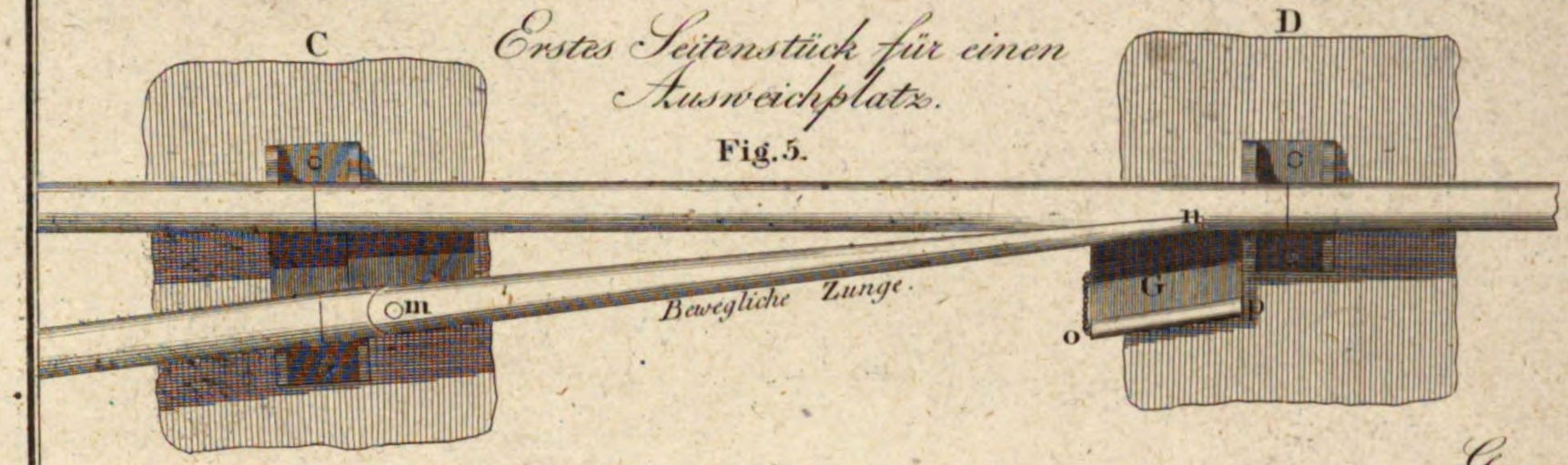
Jos. Skala sc. Prage 1837.

Längenansicht einer Gußeisenschiene von Losh, Wilso



Erstes Seitenstück für einen Ausweichplatz.

Fig. 5.



Grundriss eines A

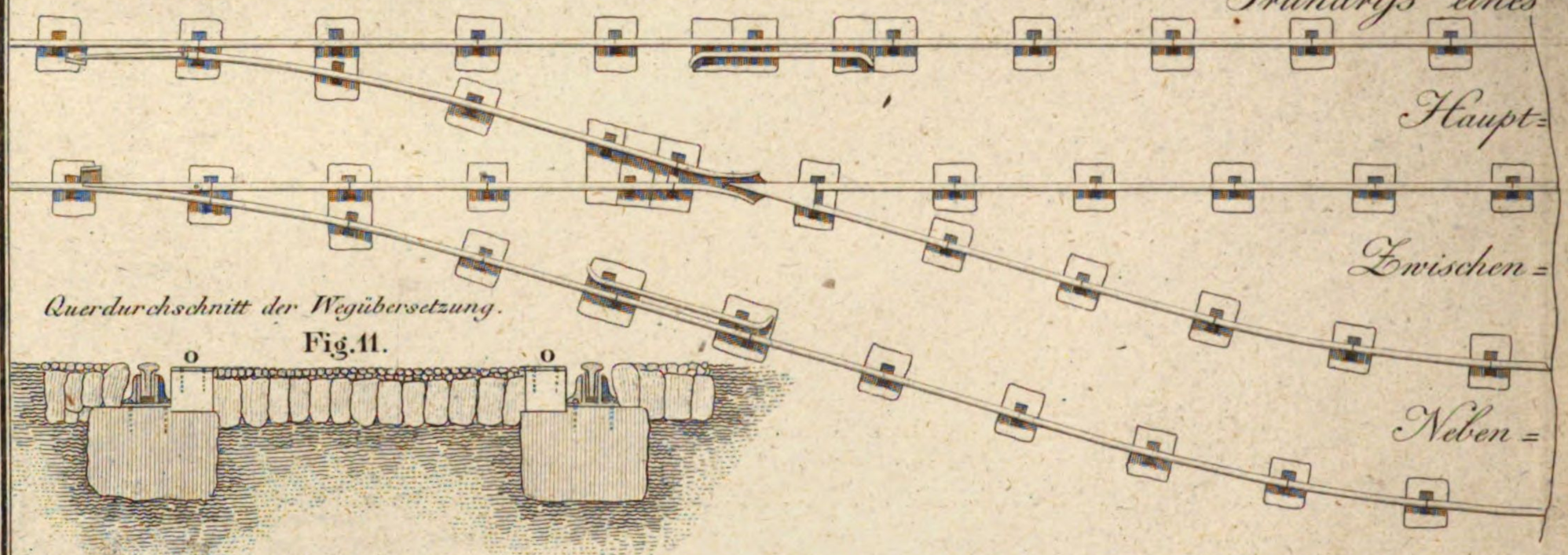


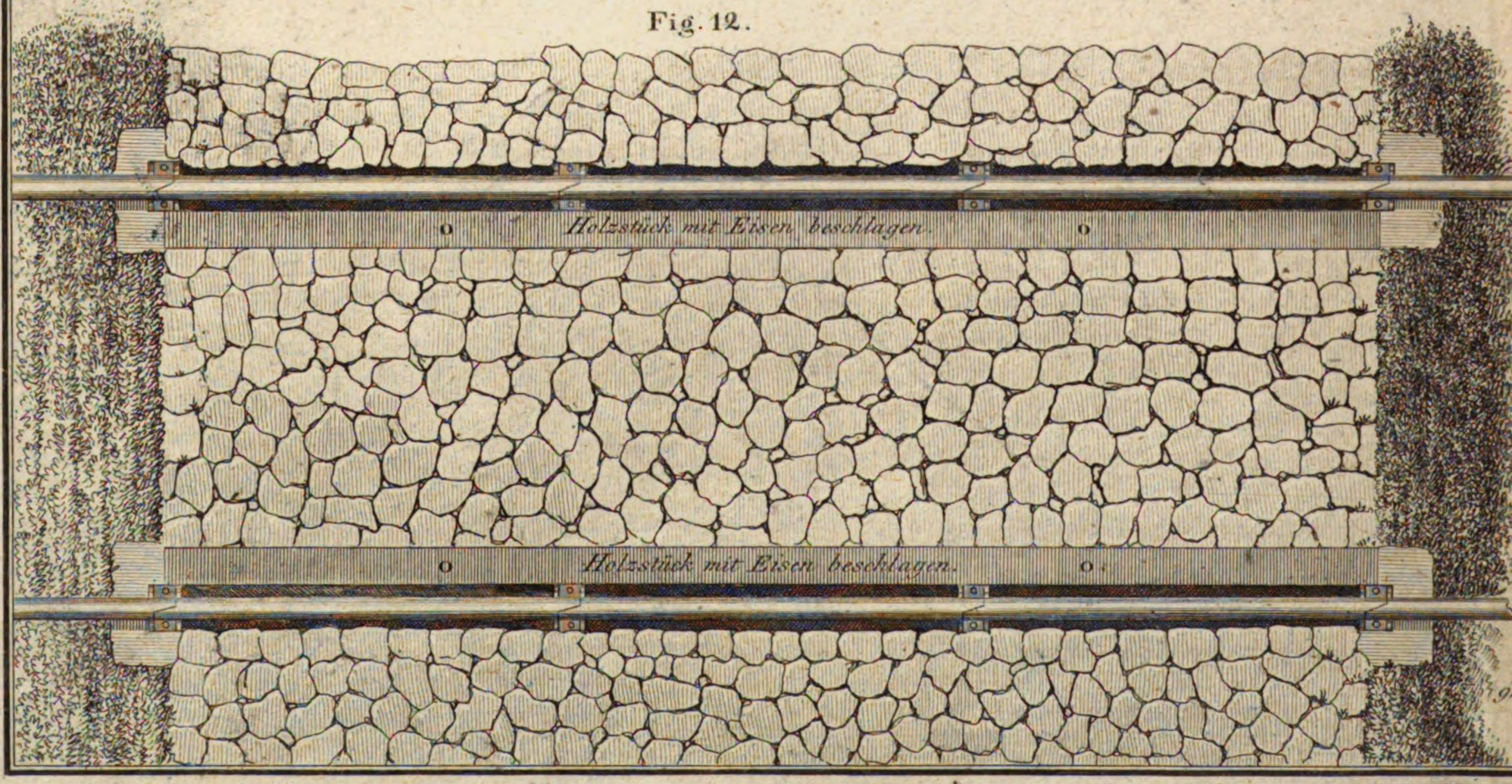
Fig.

Querdurchschnitt der Wegübersetzung.

Fig. 11.

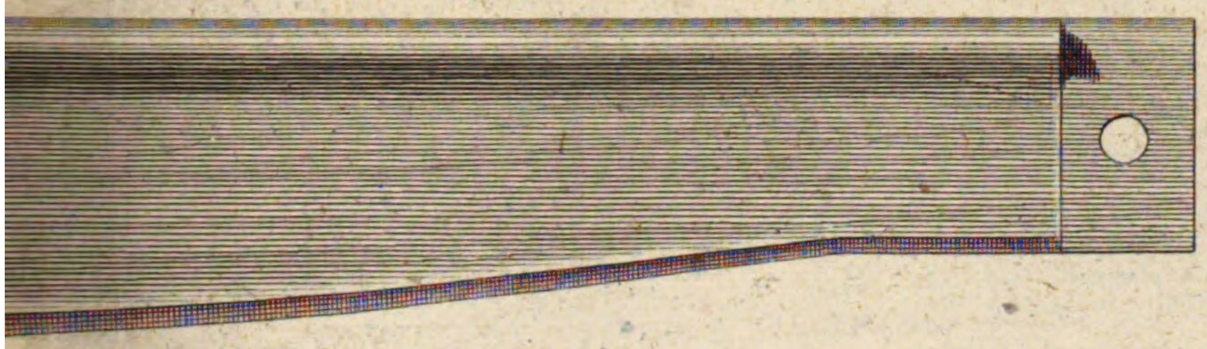
Grundriss einer Durchkreuzung der Eisenbahn mit der Chaussée

Fig. 12.

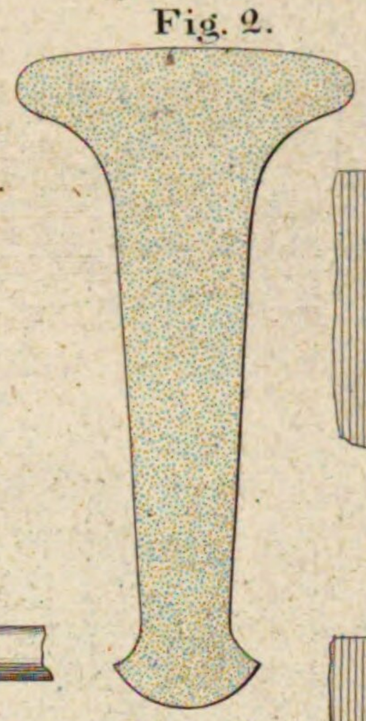


9. 10. 11.

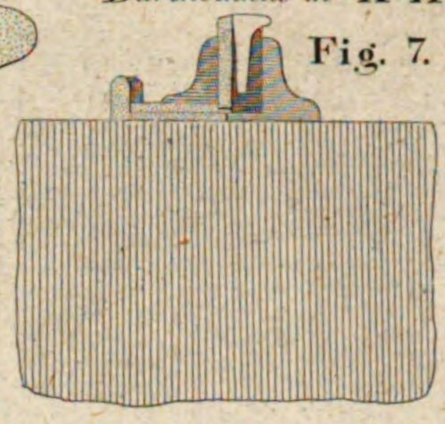
und Bell. Fig. 1.



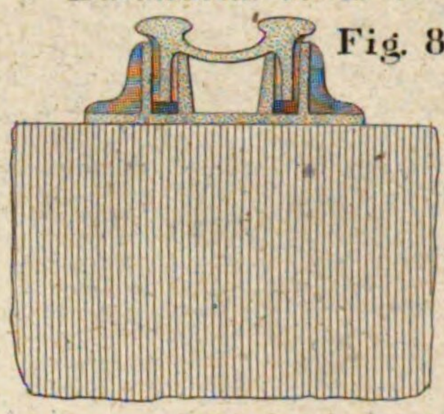
Querdurchschnitt der Gufseisenschiene.
Fig. 2.



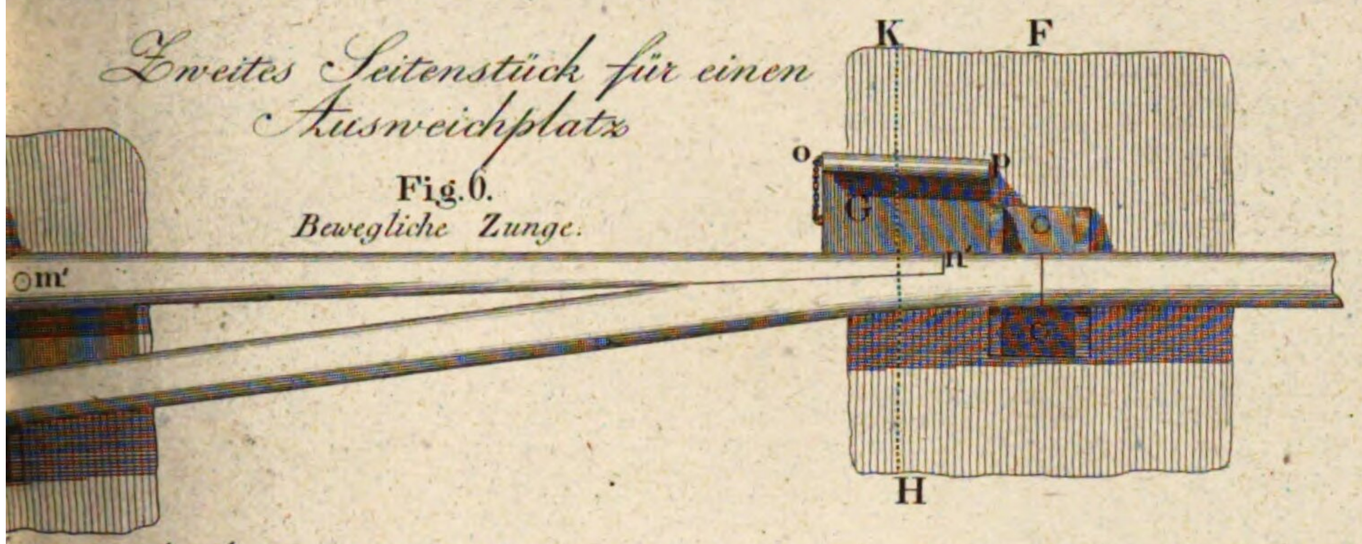
Durchschnitt in K H.
Fig. 7.



Durchschnitt in B J.
Fig. 8.



Zweites Seitenstück für einen Ausweichplatz
Fig. 6.
Bewegliche Zunge.



sweichplatzes.

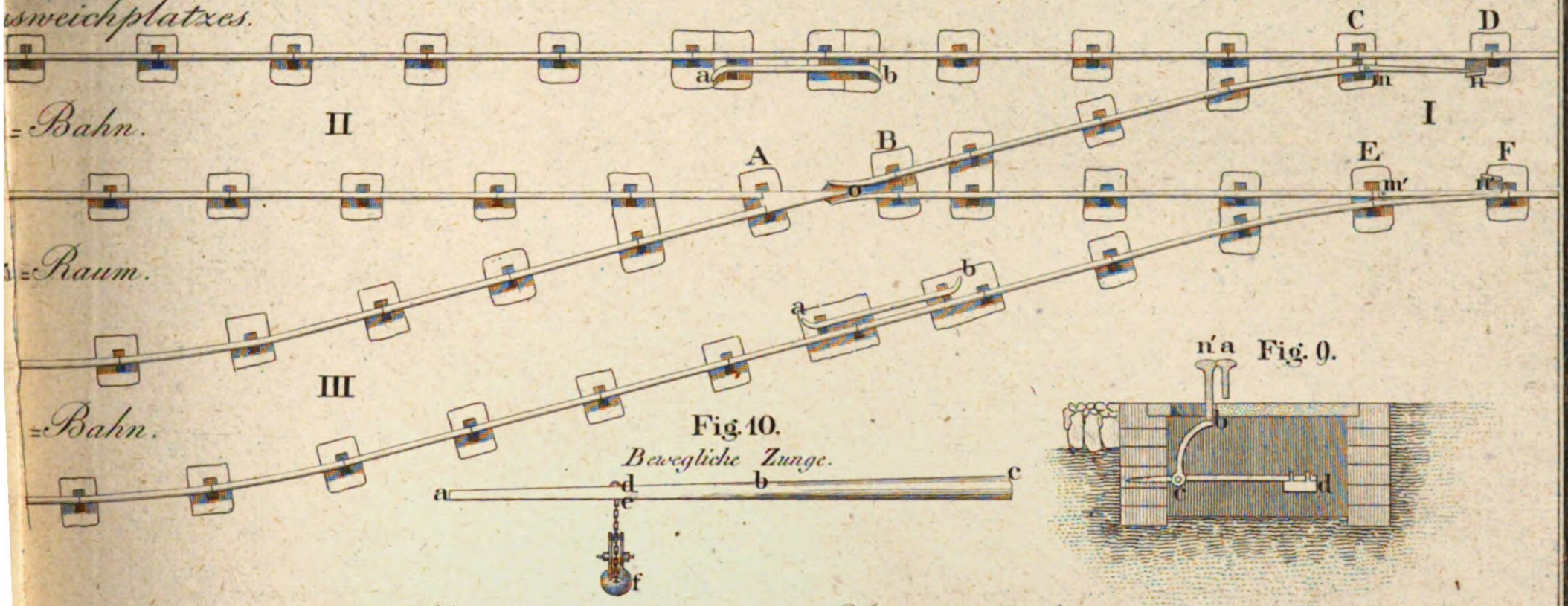


Fig. 10.
Bewegliche Zunge.

Fig. 9.

Mittelstück für einen Ausweichplatz.
Fig. 4.

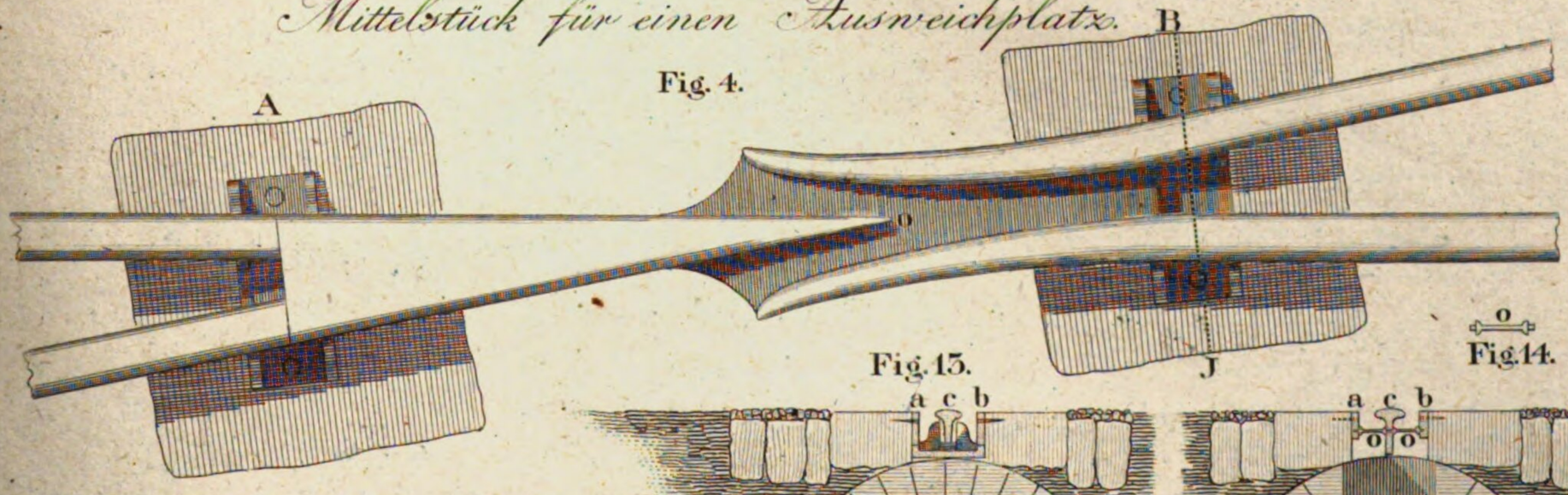


Fig. 13.

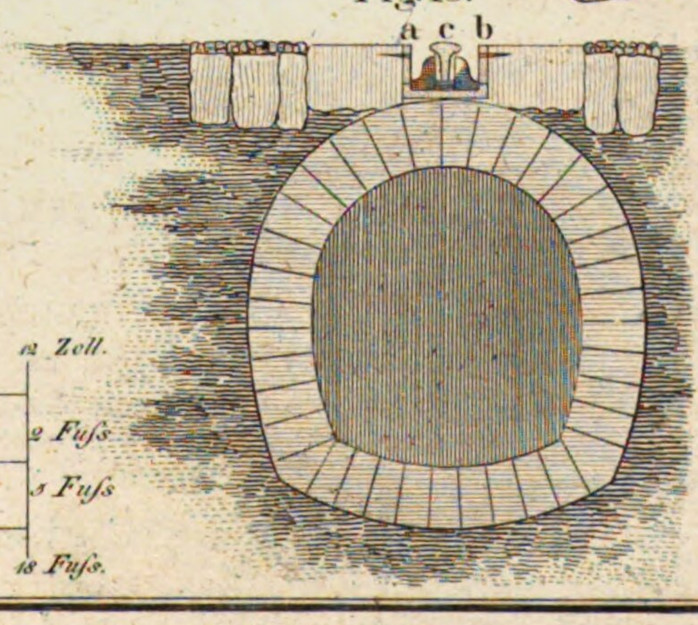
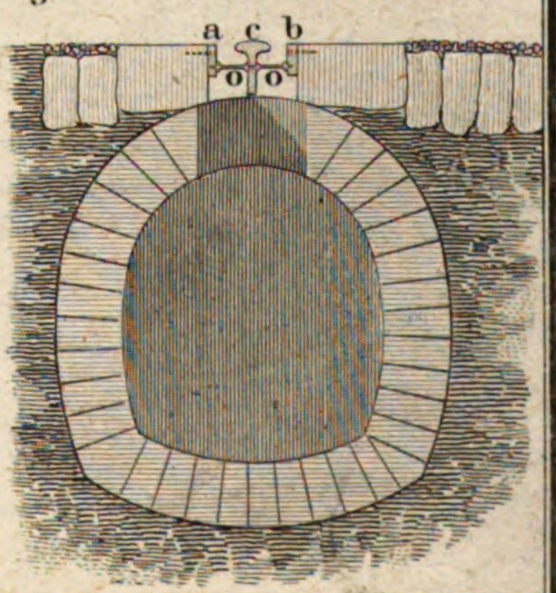
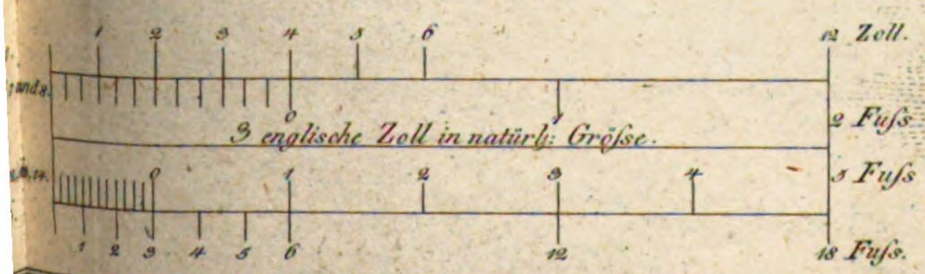


Fig. 14.



Maafsstab für Fig:



Jos. Skala sc. Praga 1831.

Durchschnitt und Längenansicht eines Pedestals sammt Schie

Fig. 1.

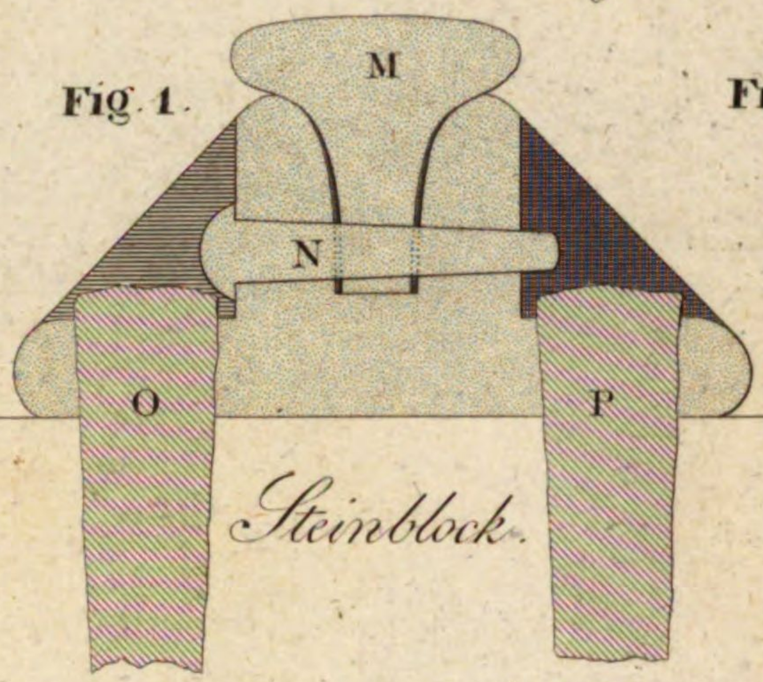


Fig. 2.

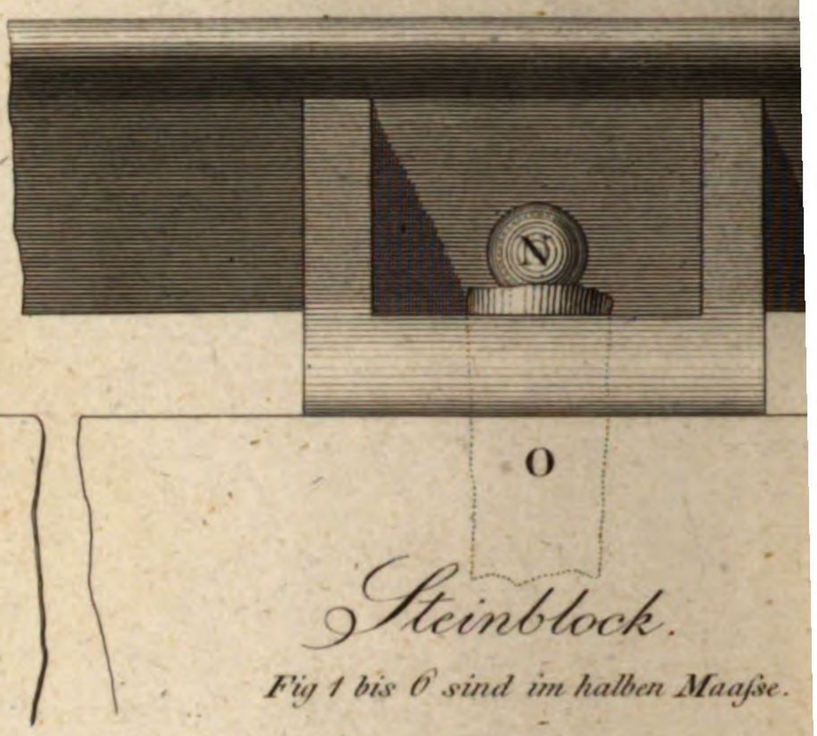


Fig 1 bis 6 sind im halben Maaße.

Grundriss eines Pedestals sammt Schiene.

Fig. 3.

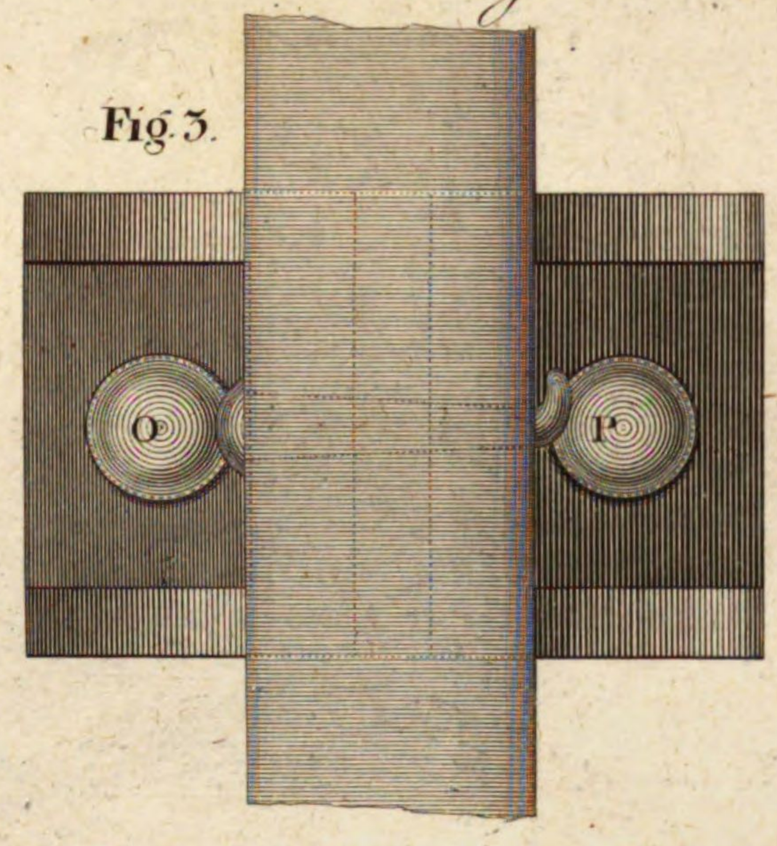
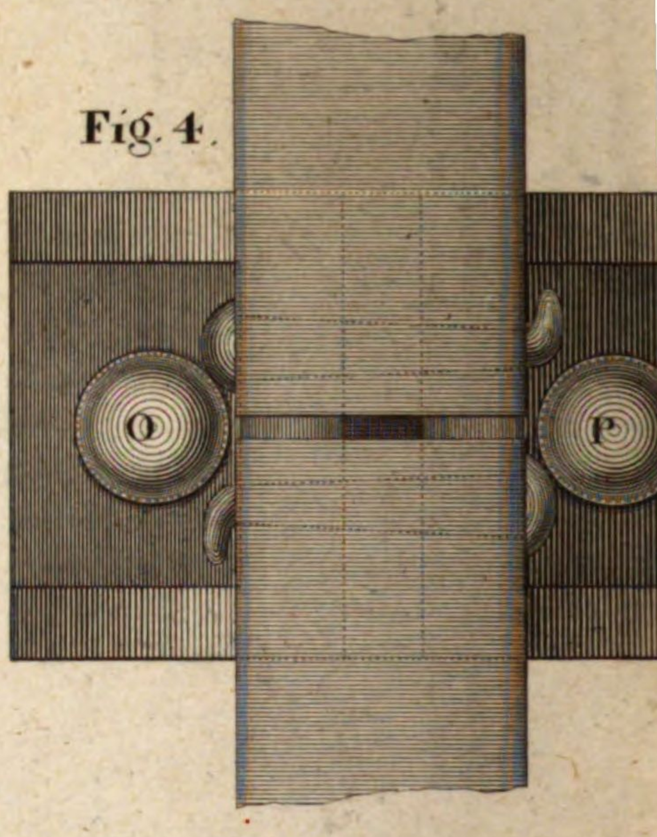


Fig. 4.



Längen- und Seitenansicht eines Achsenlagers.

Fig. 14.

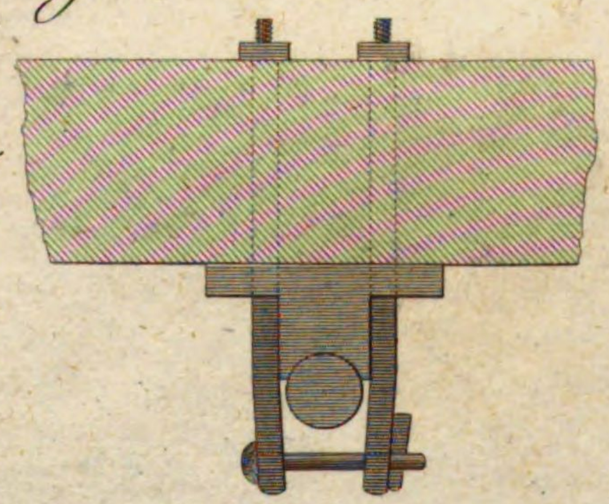


Fig. 13.

Durchschnitt Radkranz

Fig. 12.

Fig. 11. Längenansicht einer gewalzten Schie

Schienendurchschnitt nach AB Fig 11.

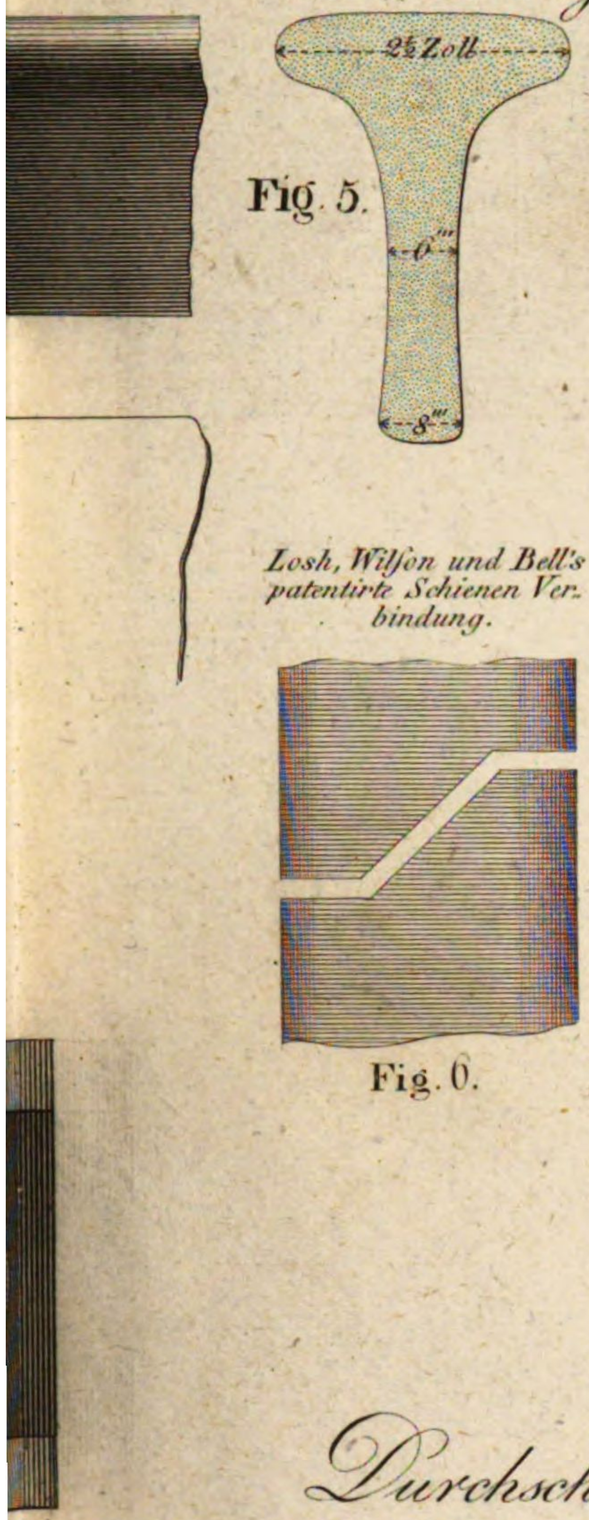


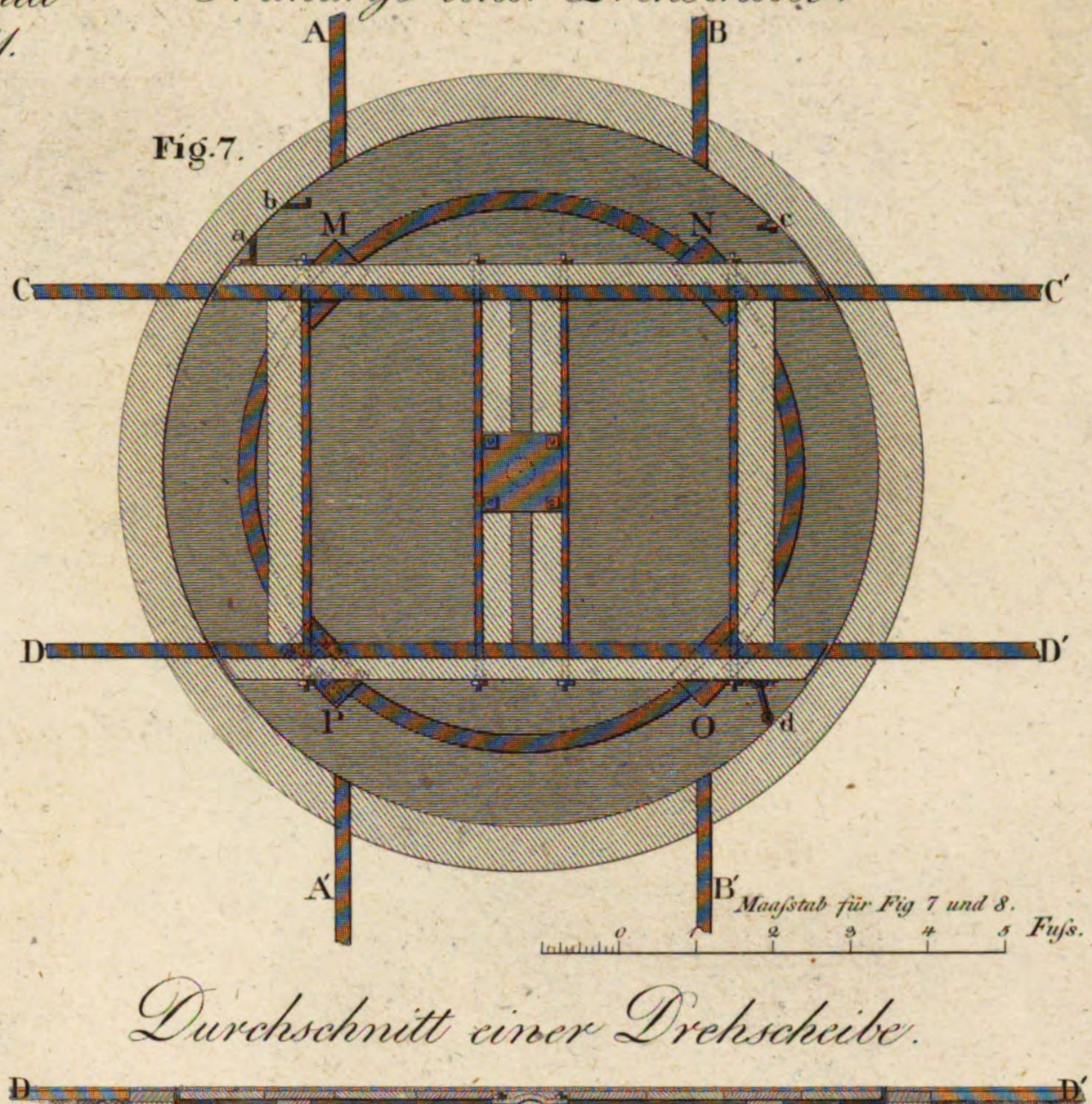
Fig. 5.

Losh, Wilson und Bell's patentirte Schienen Verbindung.

Fig. 6.

Grundriss einer Drehscheibe.

Fig. 7.



Durchschnitt einer Drehscheibe.

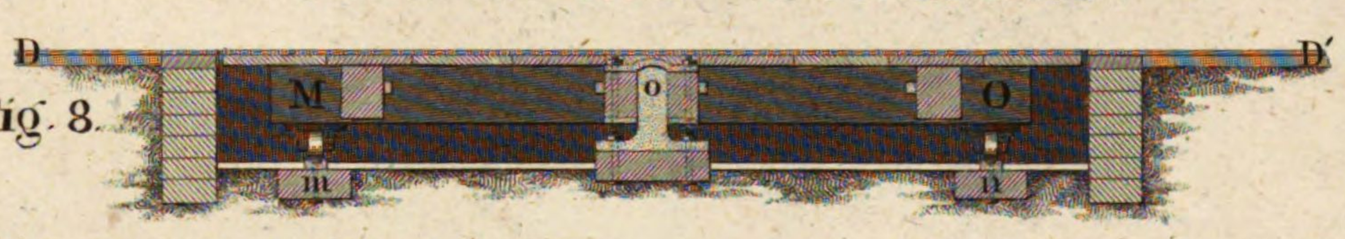


Fig. 8.

Durchschnitt und vordere Ansicht eines Eisenbahnwagenrades.

Fig. 10.

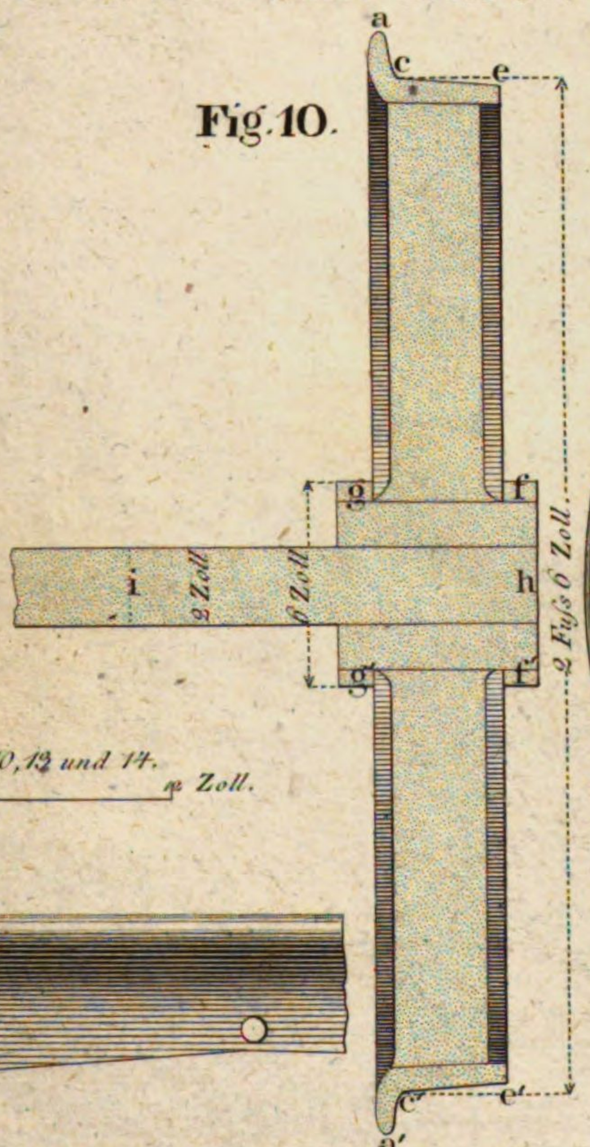
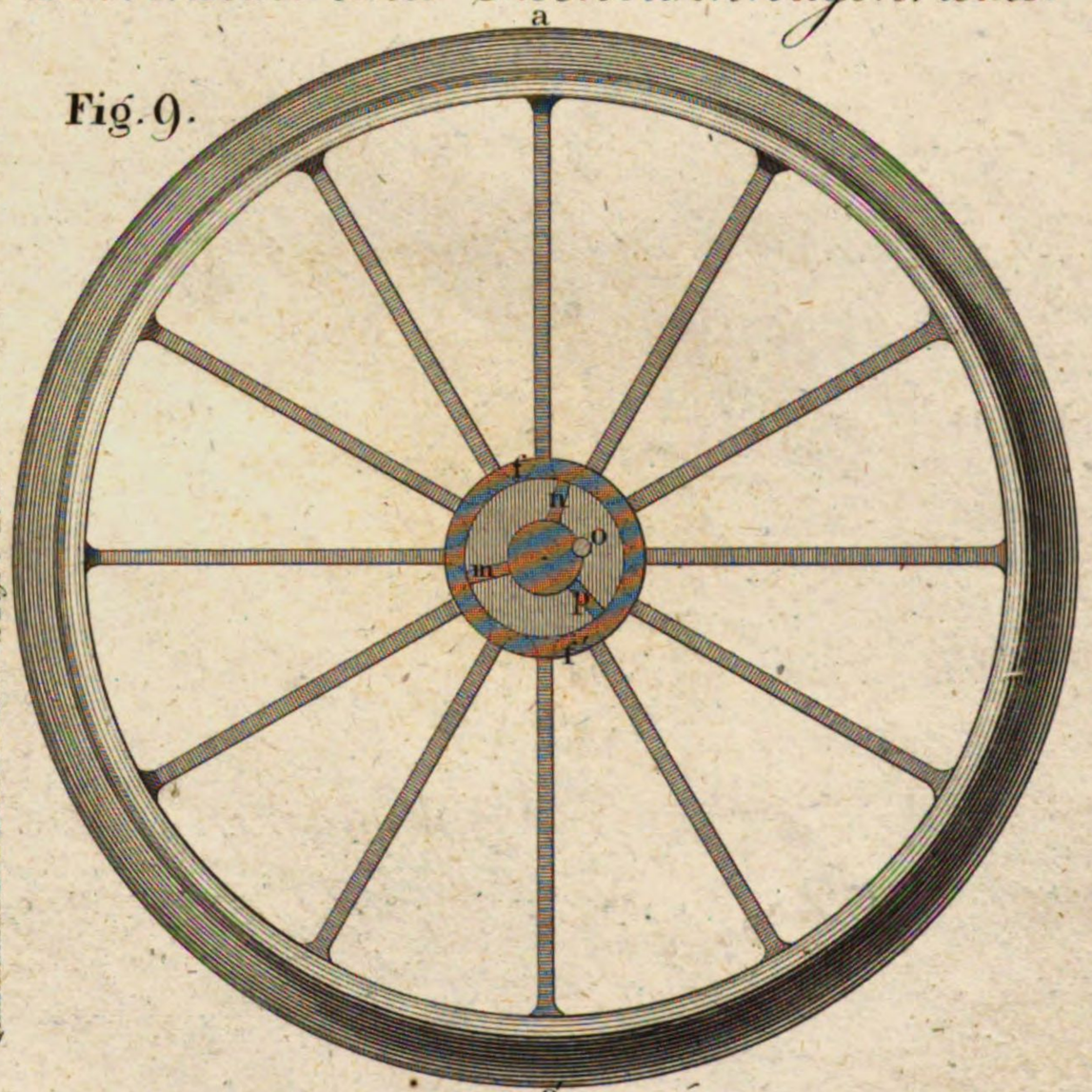


Fig. 9.



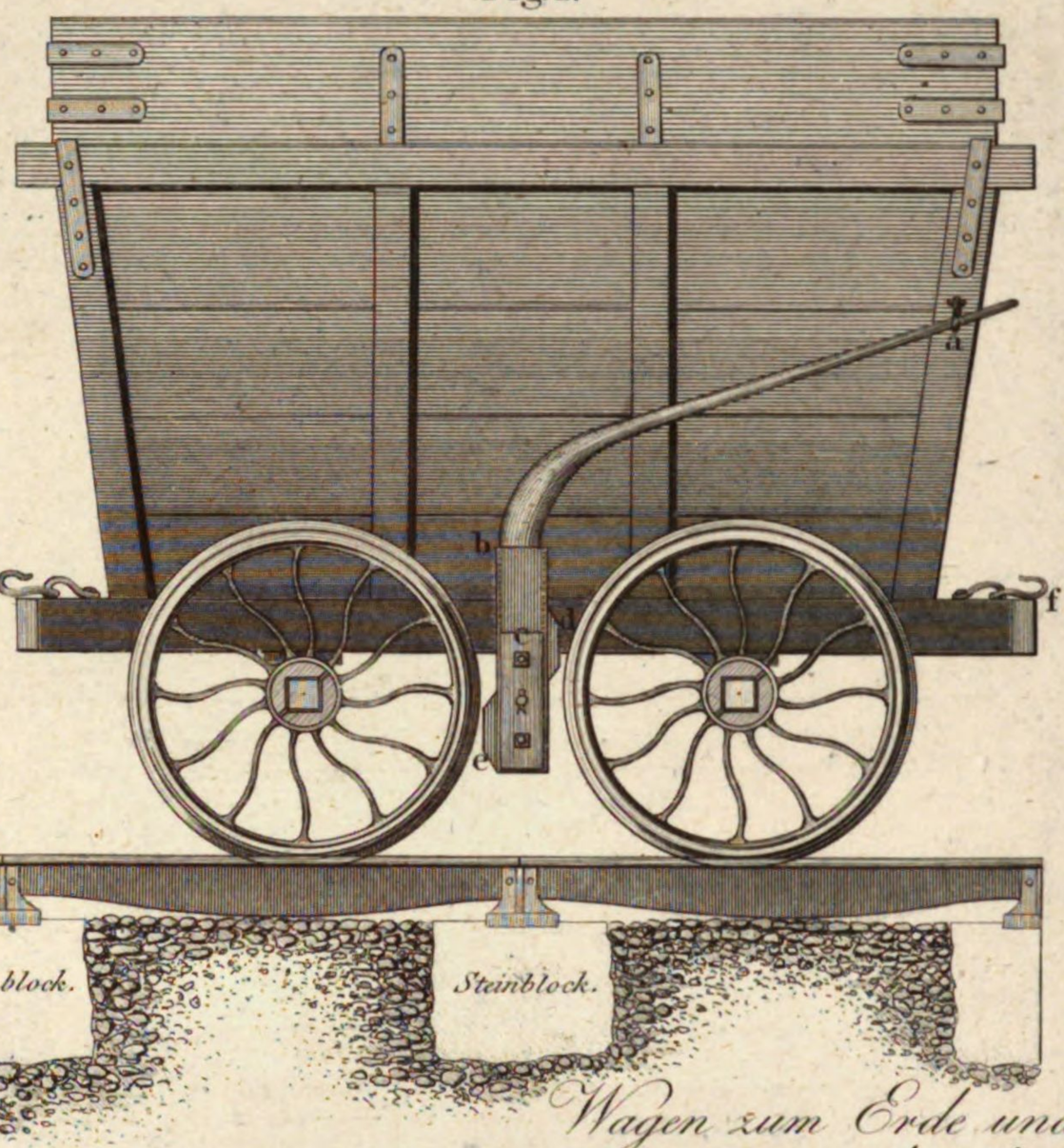
Maafsstab für Fig. 9, 10, 12 und 14.
½ Zoll.

M. Aigner sc. Vienna.

Steinkoh

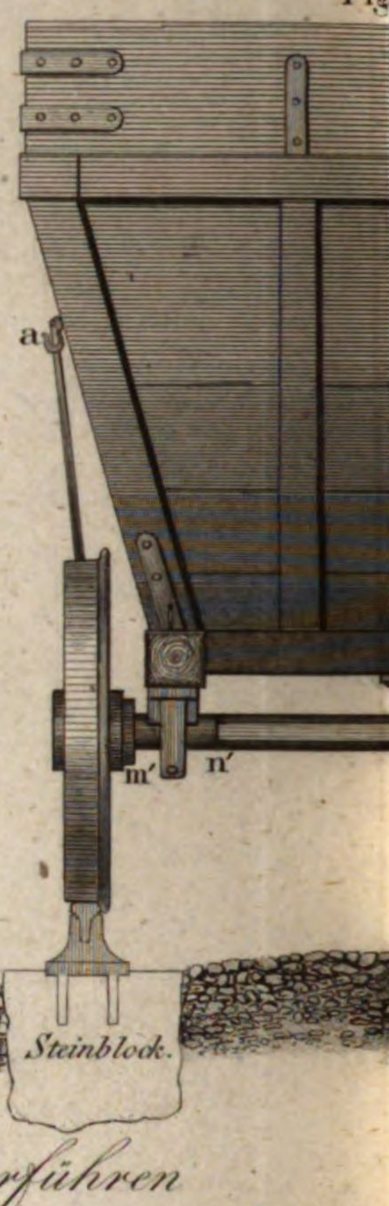
Längenansicht.

Fig. 1.



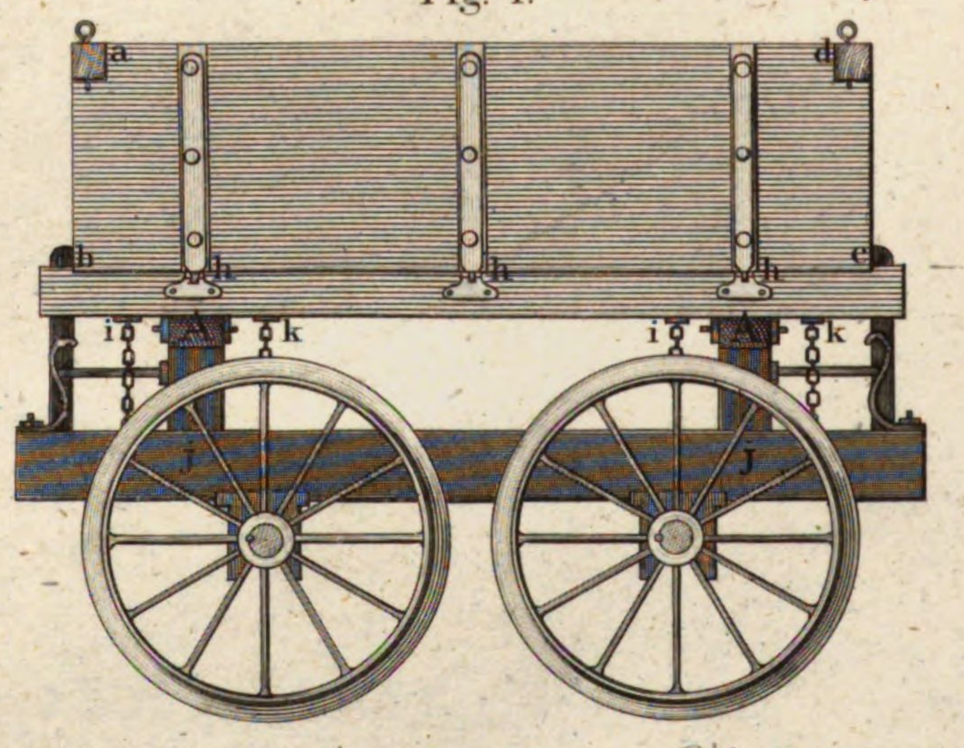
Vordere

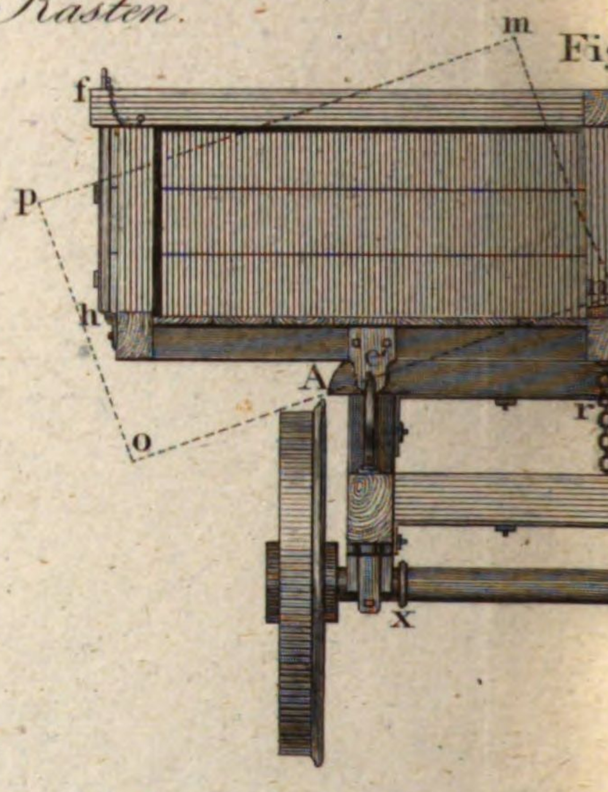
Fig



Wagen zum Erde und Schotterführen mit doppeltem Kasten.

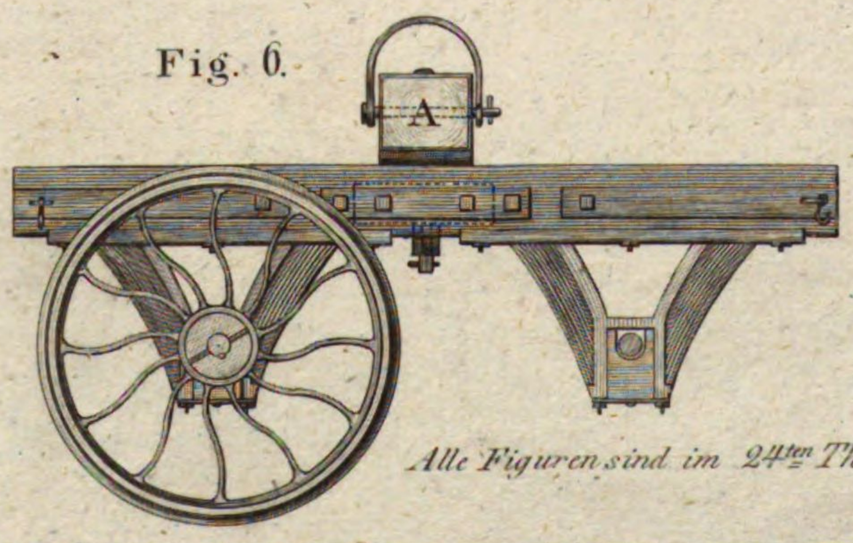
Fig. 4.

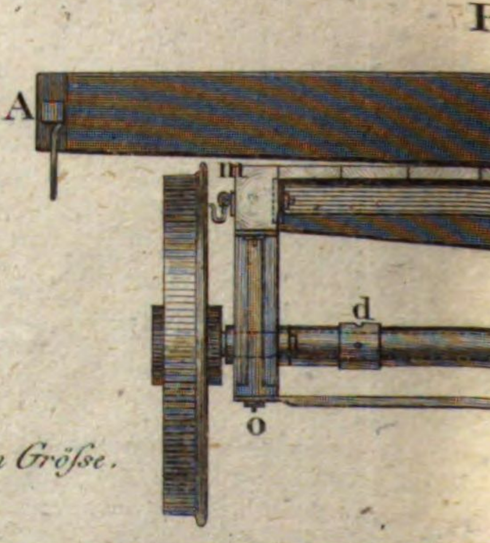




Wagen zum Bauholzführen.

Fig. 6.



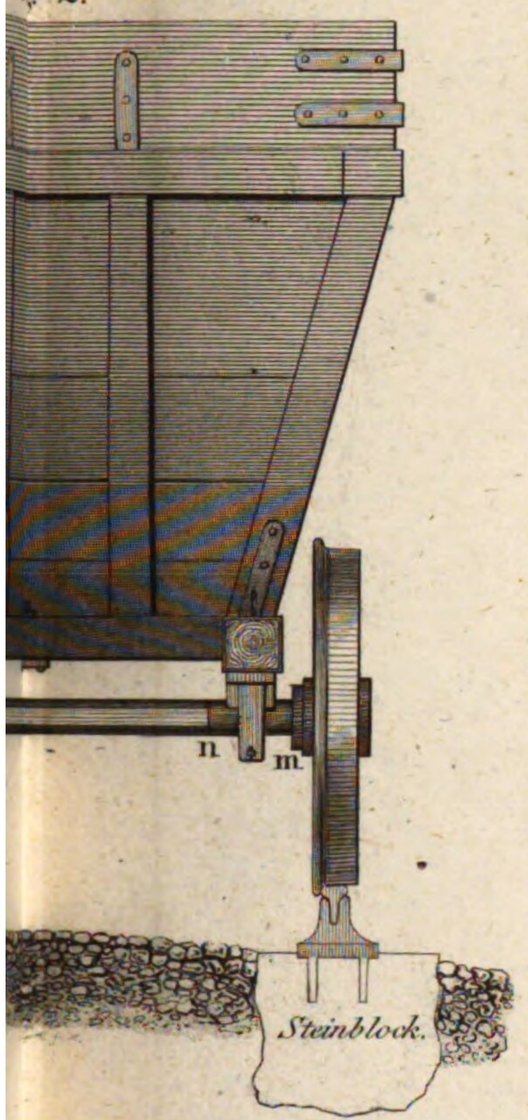


Alle Figuren sind im 24ten Theile der natürlichen Größe.

Lennwagen.

Ansicht.

g. 2.



Grundriſs.

Fig. 3.

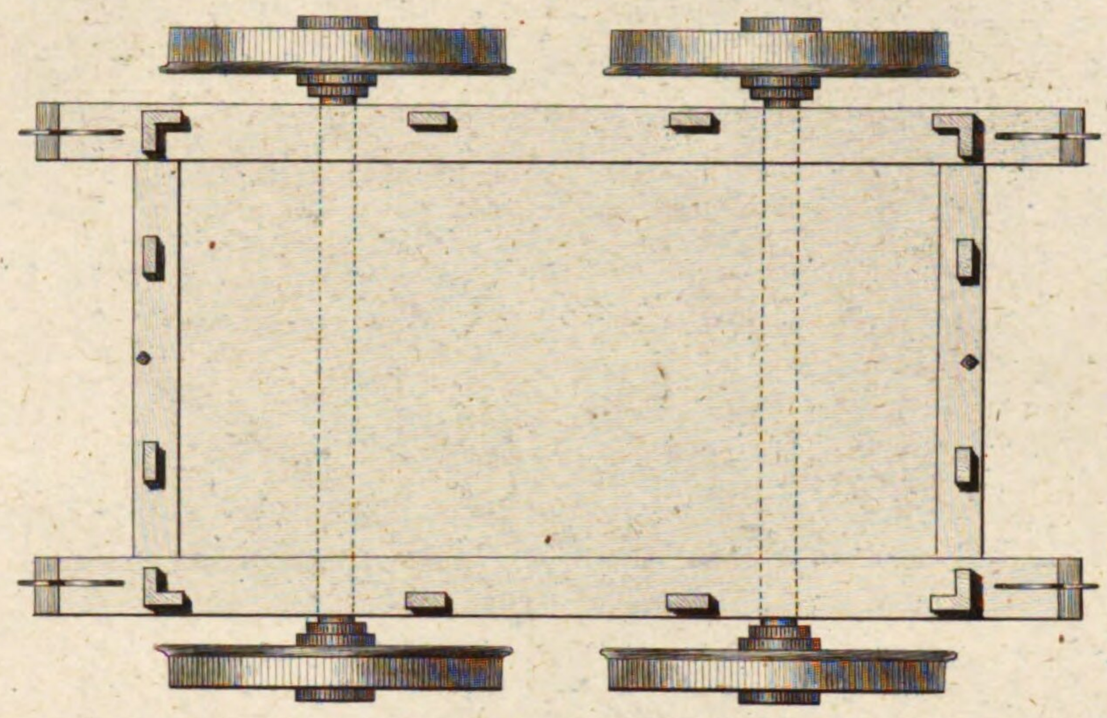
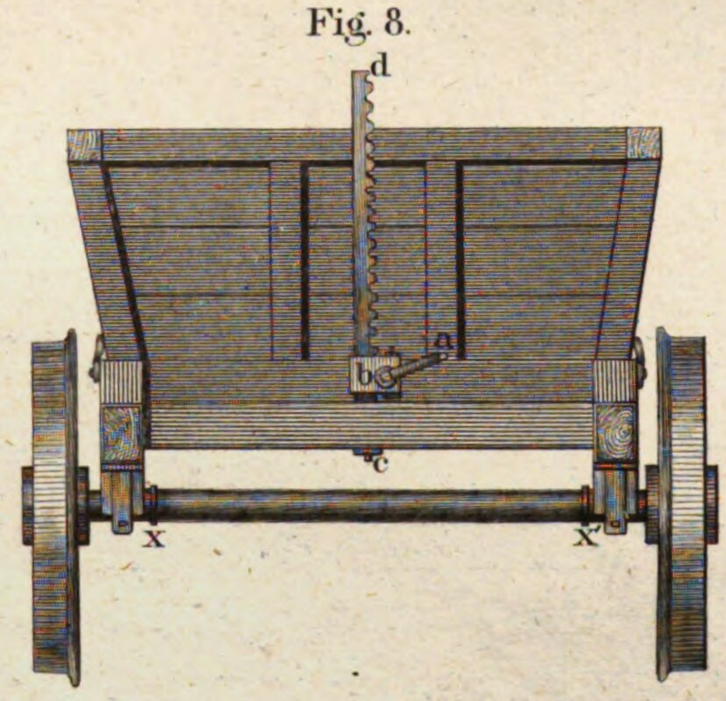


Fig. 8.



Wagen zum Ausschottern der Bahn mit Hebewinde.

Fig. 5.

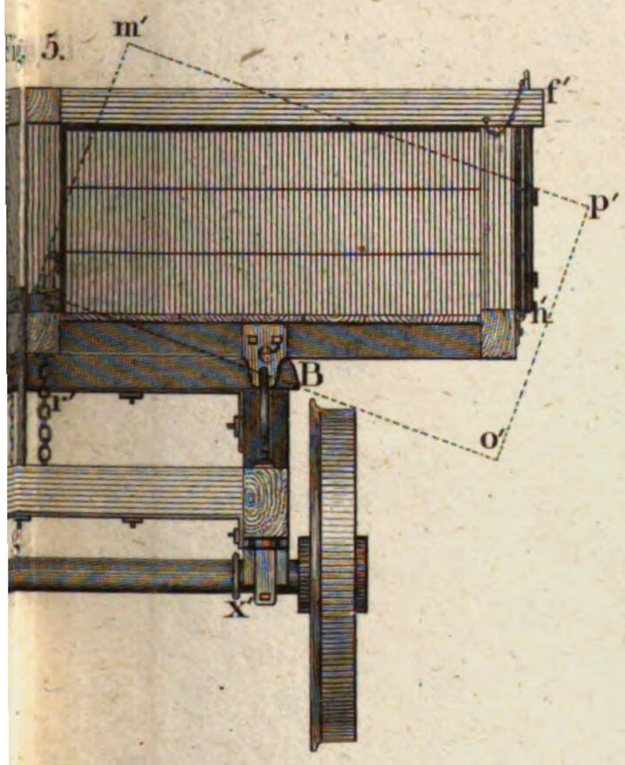


Fig. 9.

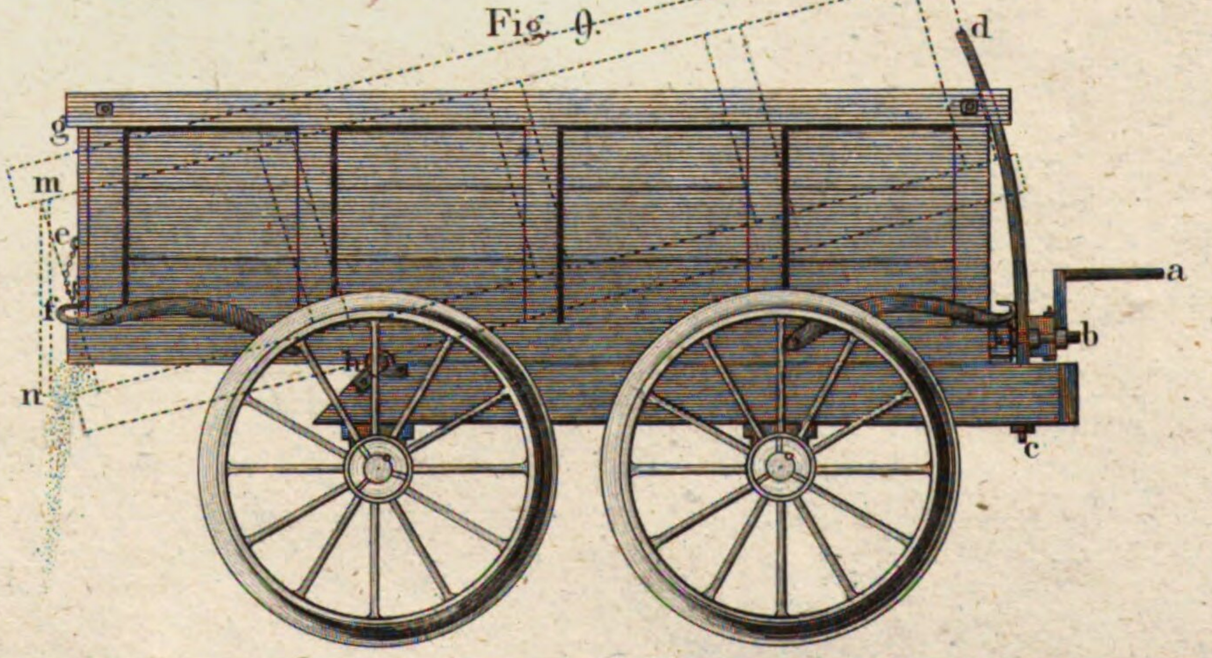
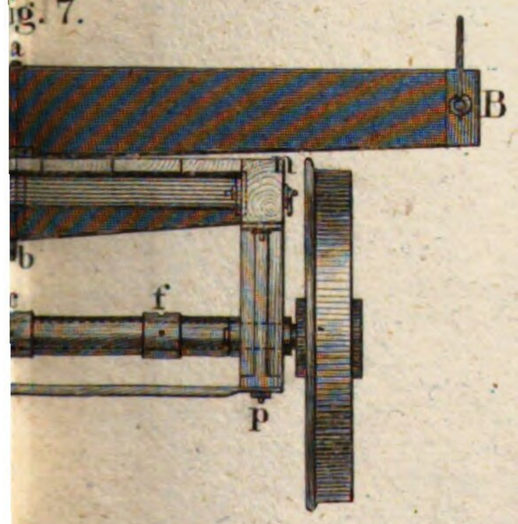


Fig. 7.



J. Kyrtl sculp. Vienna 1830.

Steinkohlen- oder Kalkwagen zum Ausstürzen nach unten.

Fig. 1.

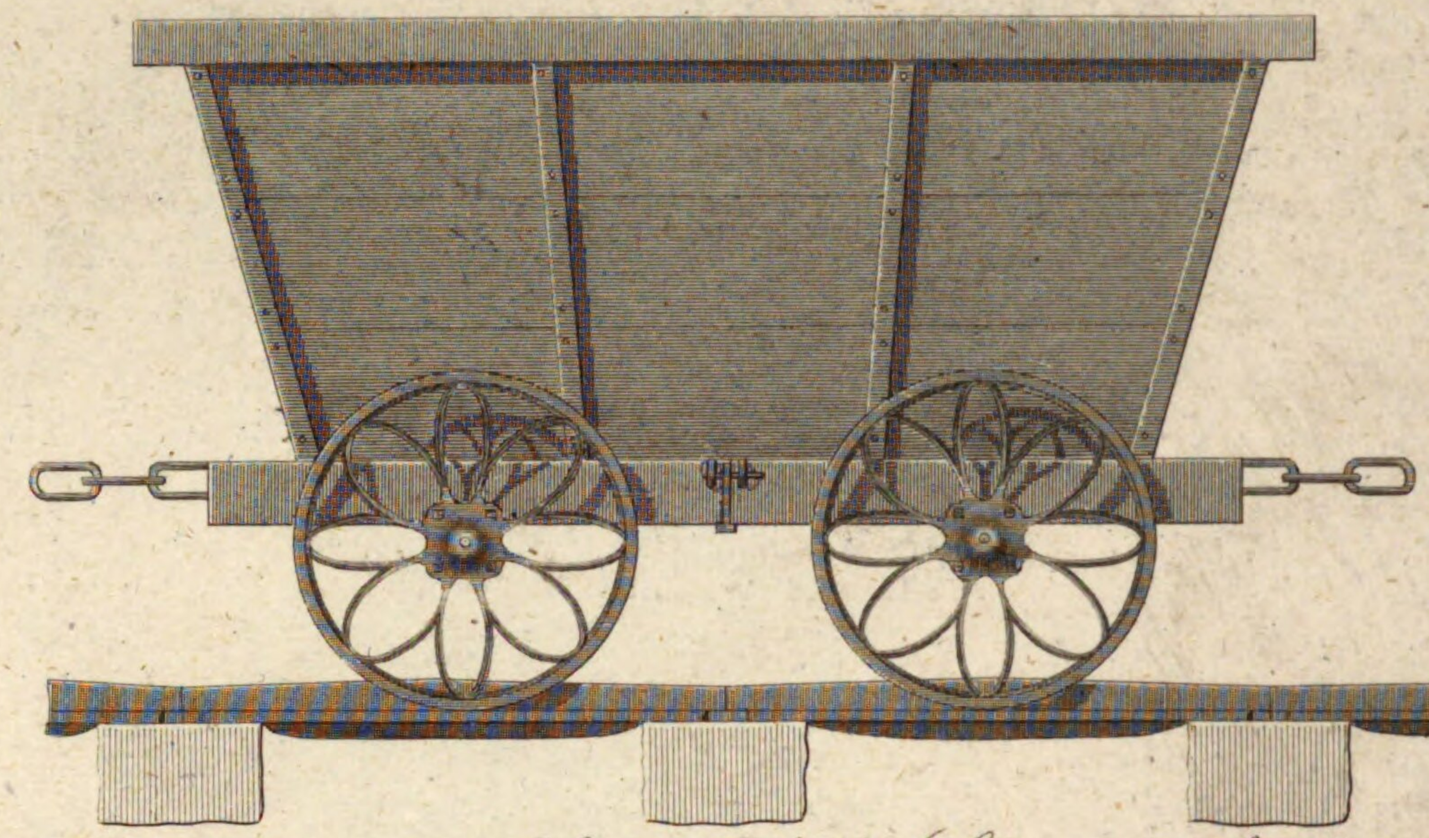
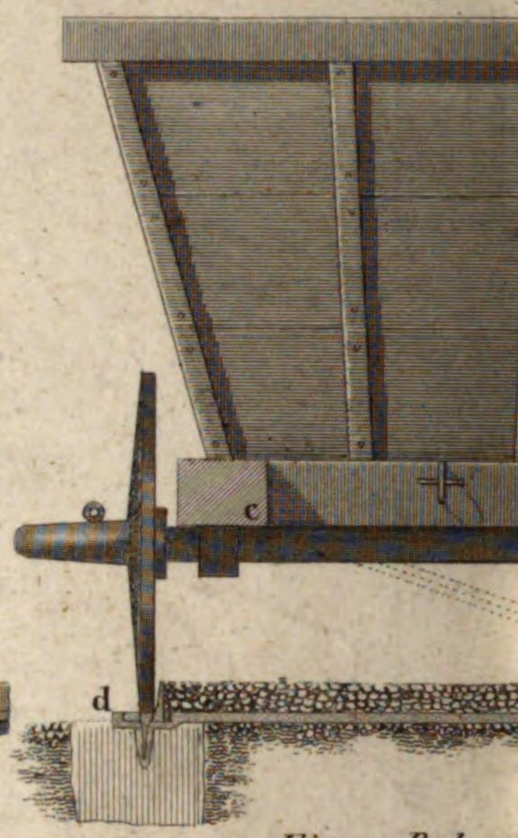


Fig. 2.



Grundriss der Schienenverbindung.

Eiserne Bahnsch

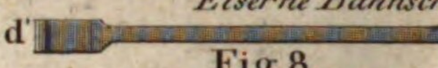


Fig. 8.

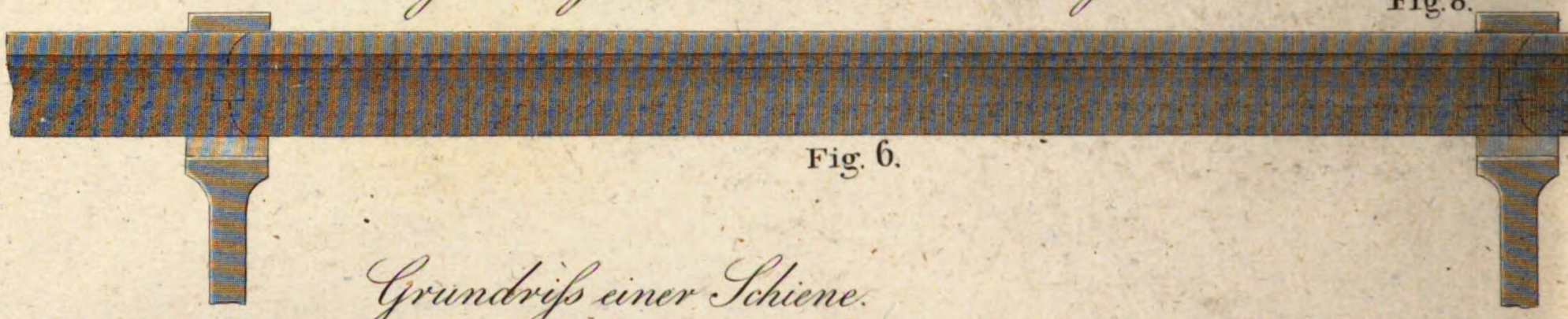


Fig. 6.

Grundriss einer Schiene.

Fig. 9.

Durchschnitt.

Fig. 10.

Dur

F

Längenansicht einer Schiene.

Fig. 11.

Grundriss einer Schiene.

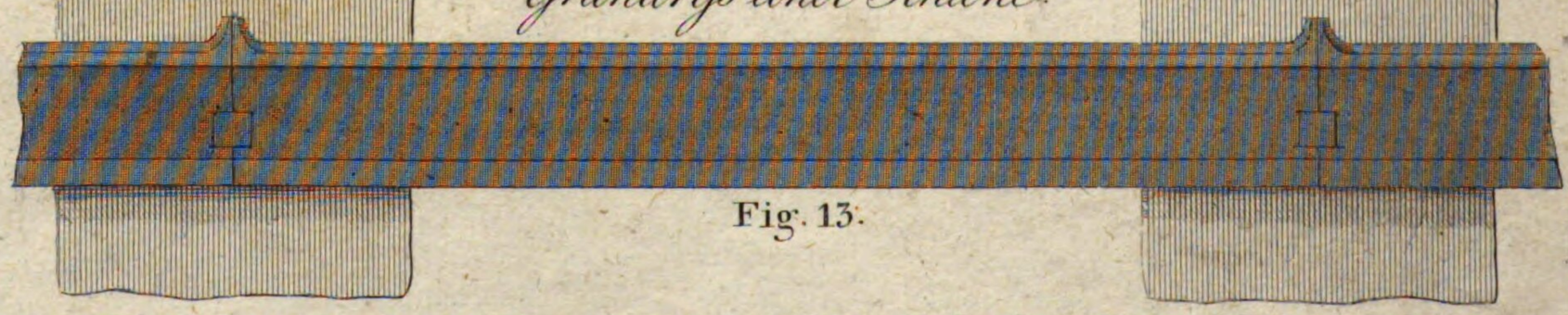
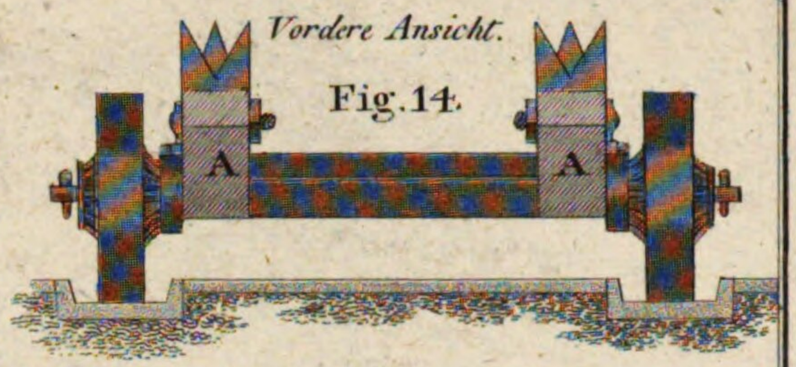


Fig. 13.

Karren zum Transporte der Fäßer in den Westindischen Docks.

Vordere Ansicht.

Fig. 14.



Längenansicht.

Fig. 15.

Durchschnitt eines Rades samt Achse.

Fig. 3.

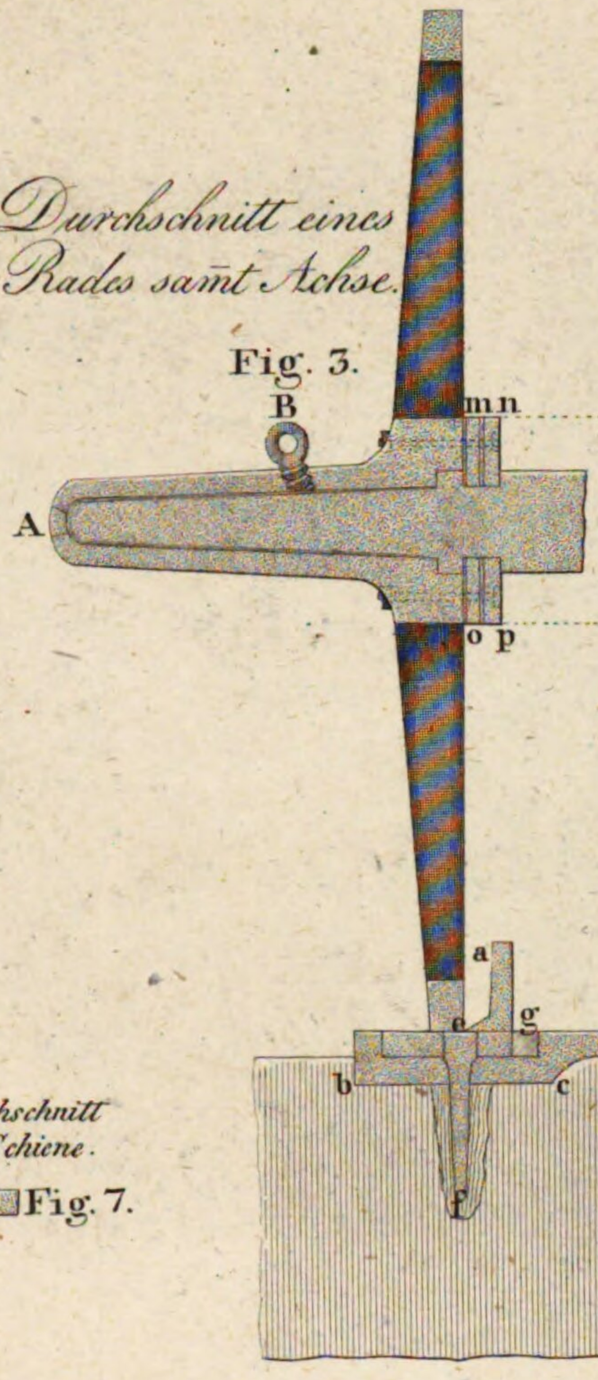
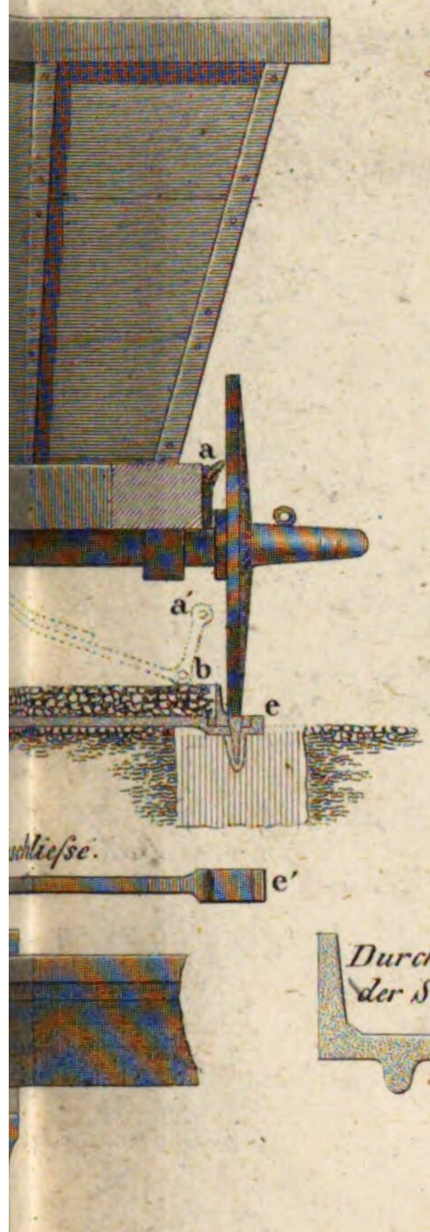


Fig. 4.

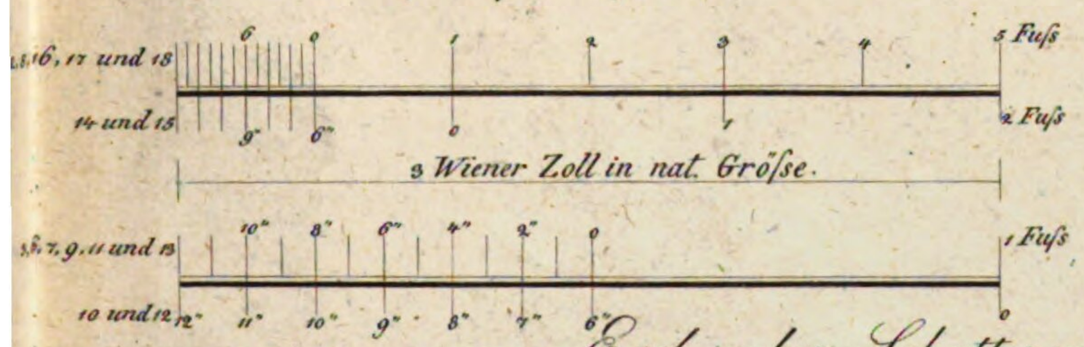
Fig. 5.



Durchschnitt der Schiene.

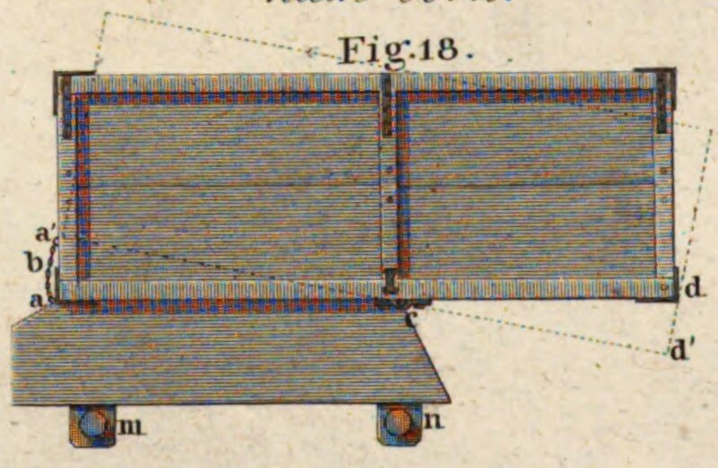
Fig. 7.

Maasstab für Fig.



Wagenkasten zum Ausstürzen nach vorn.

Fig. 18.



Erd- oder Schotterwagen zum Ausstürzen nach vorn.

rchschnitt.

Fig. 12.

Fig. 16.

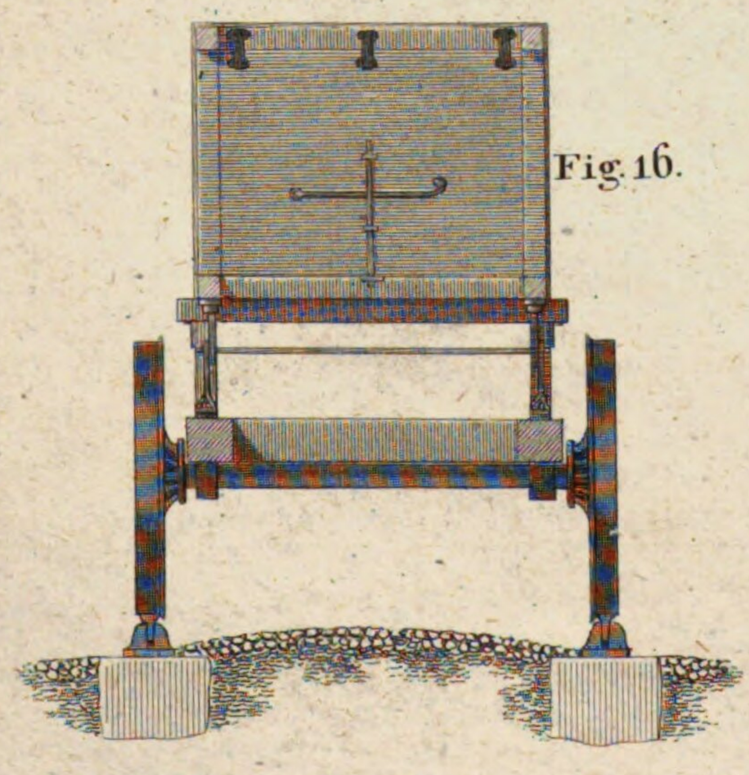
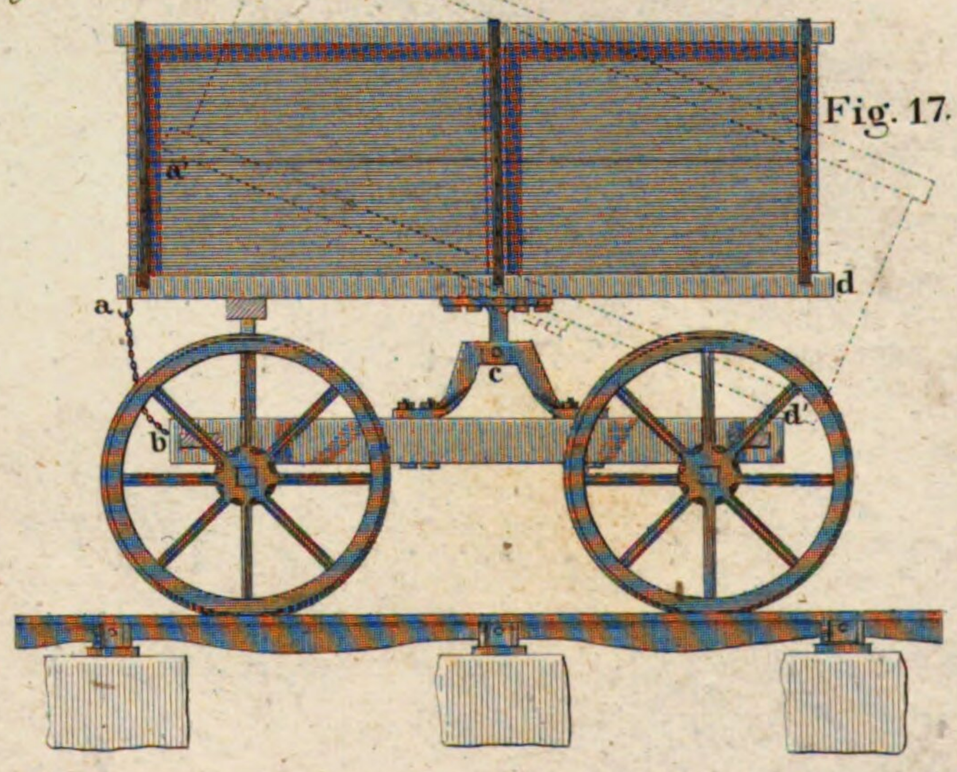


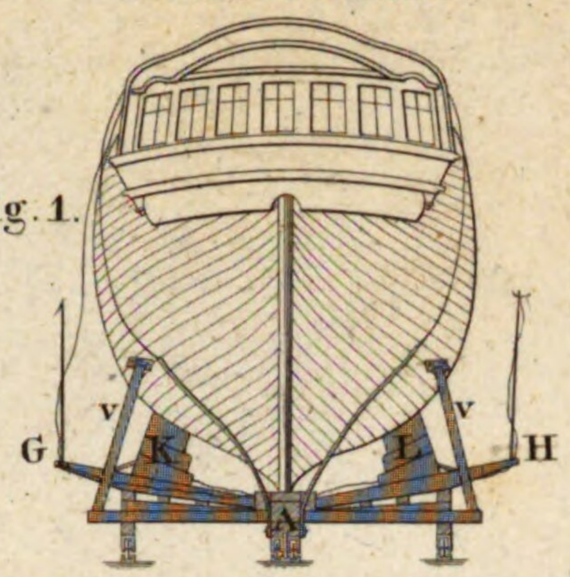
Fig. 17.



Aigner excud. Vienna.

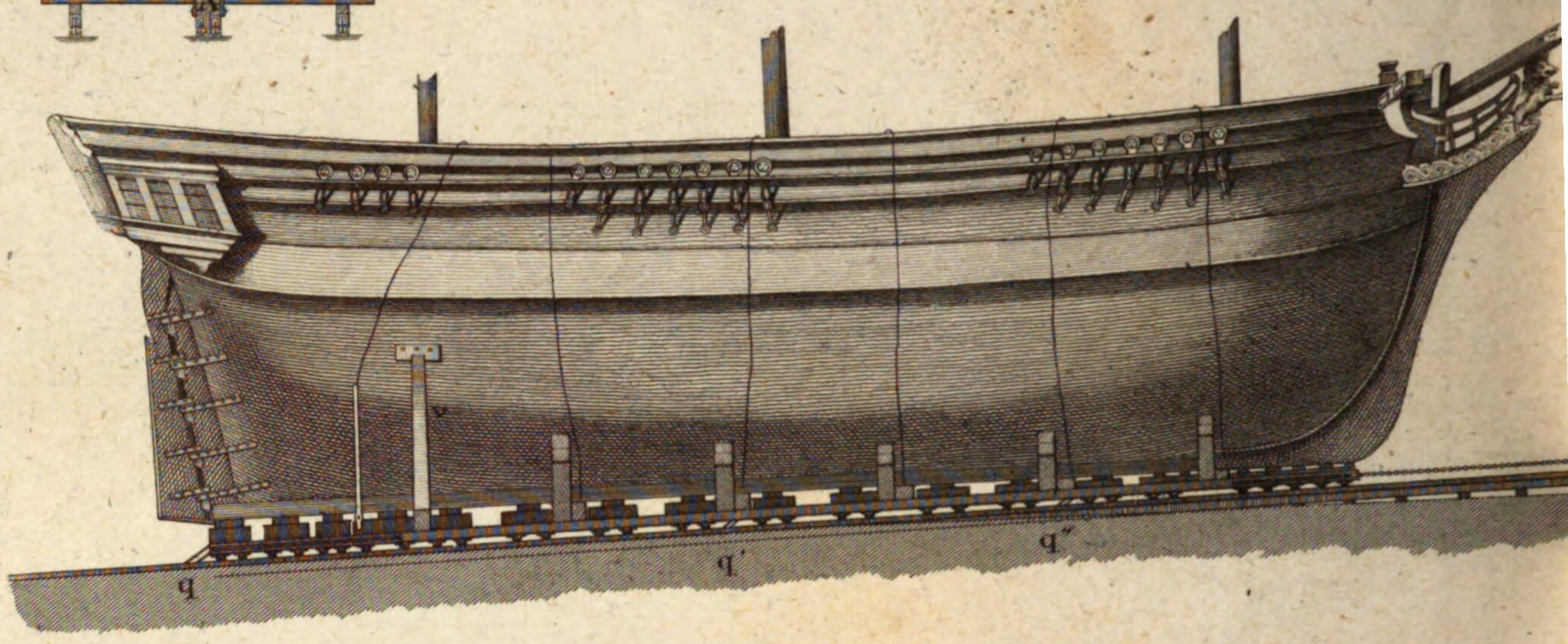
Ansicht von hinten.

Fig. 1.

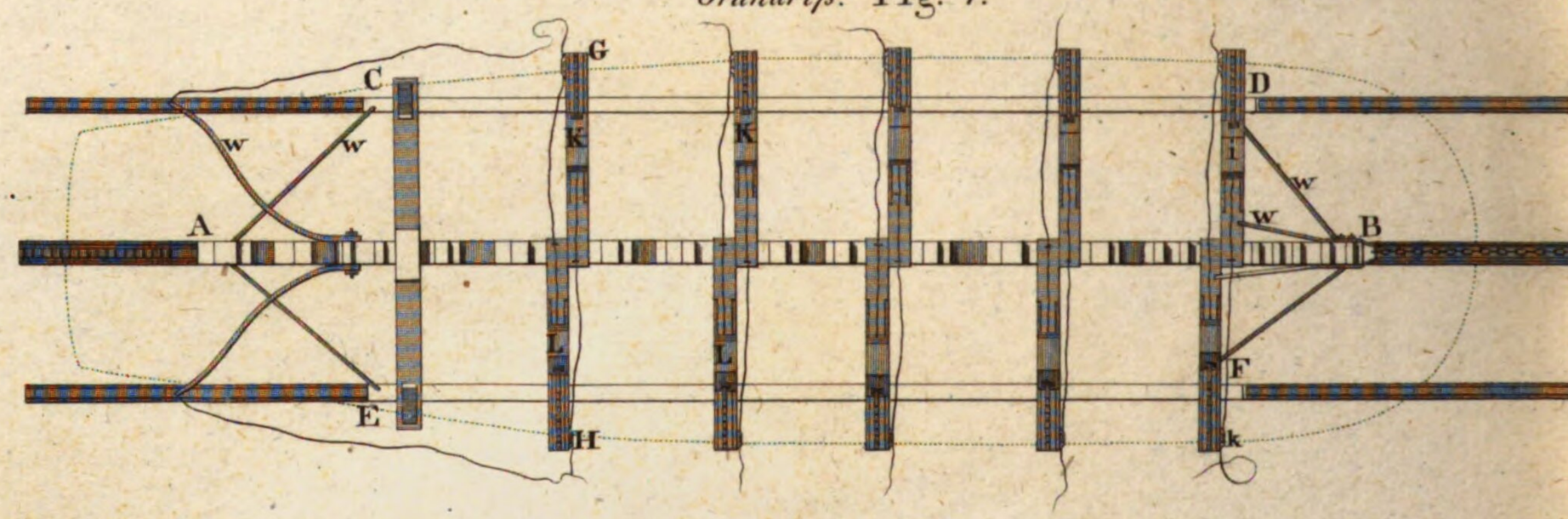


Morton's patentirte Eisenbahn zum Herausziehen der Seeschiffe auf das feste Land.

Fig. 2. *Längenansicht.*



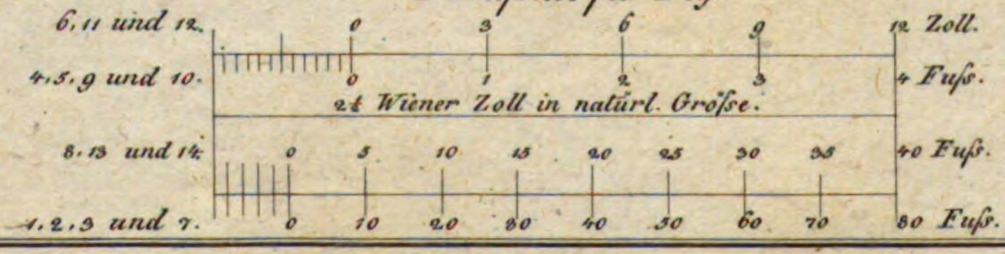
Grundriſs. Fig. 7.



Selbstwirkende schiefe Fläche bei Leeds in England zum Aufziehen leerer Wägen durch herabgehende beladene.

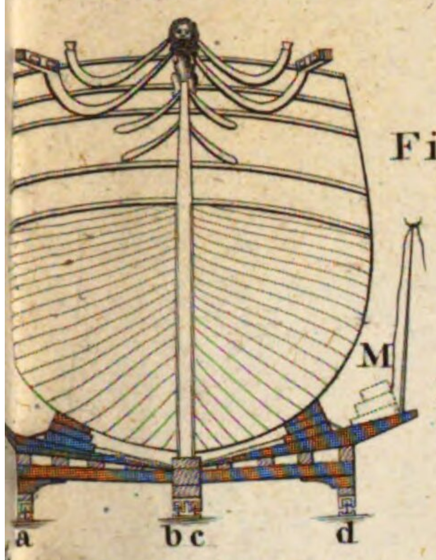
Fig. 13.

Maaſsstab für Fig.



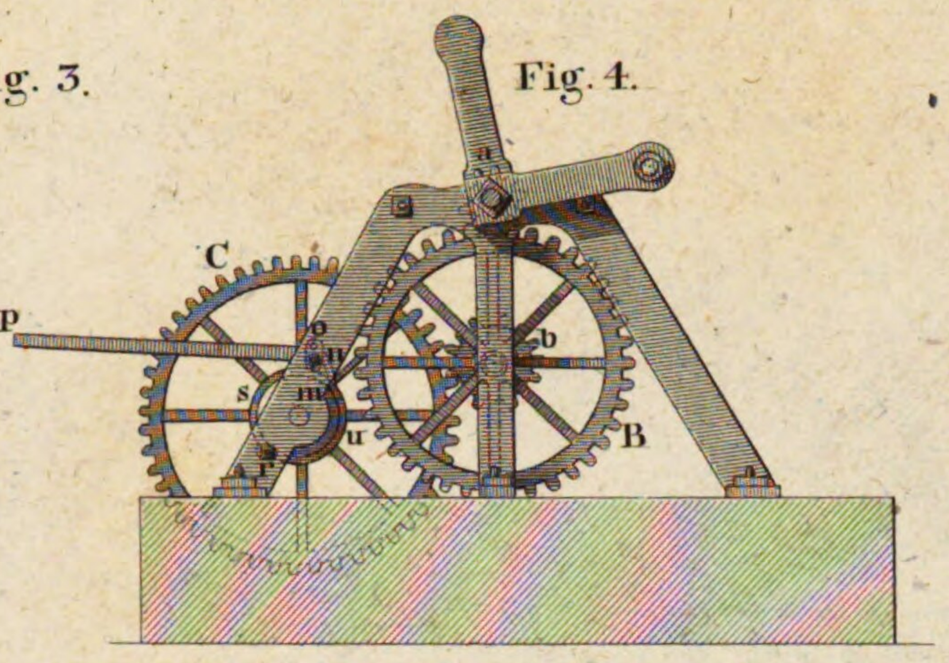
Ansicht von vorn.

Fig. 3.



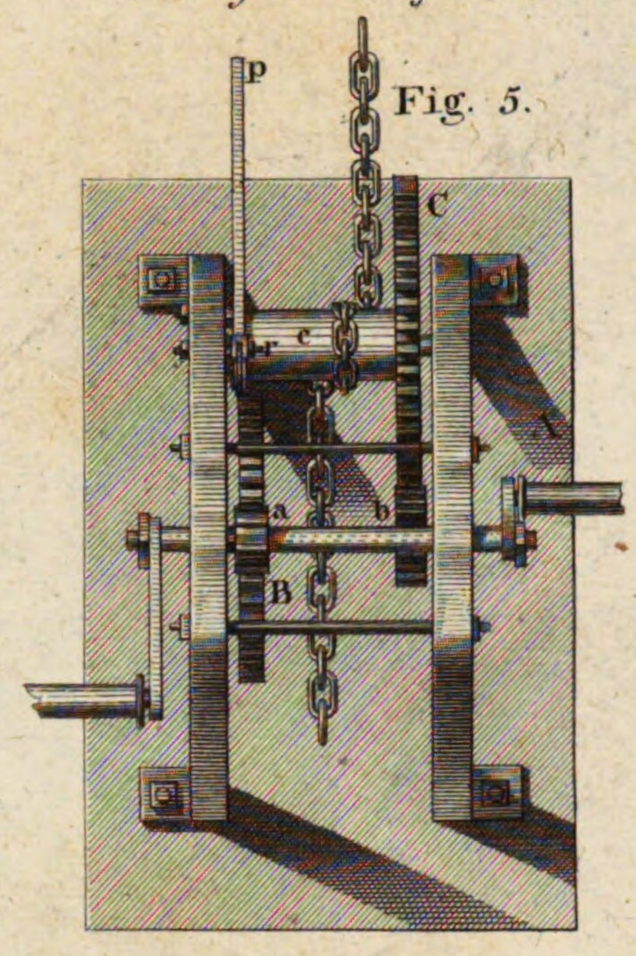
Seitenansicht der Zugmaschine.

Fig. 4.

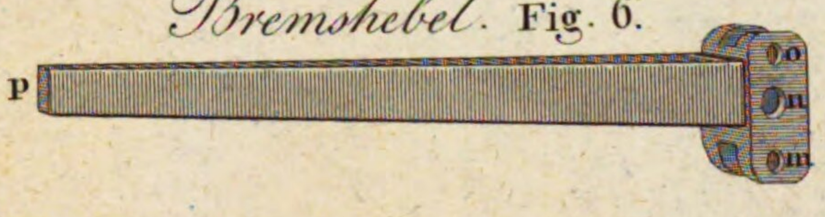


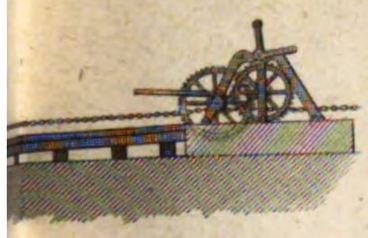
Grundriſs der Zugmaschine.

Fig. 5.



Bremshebel. Fig. 6.



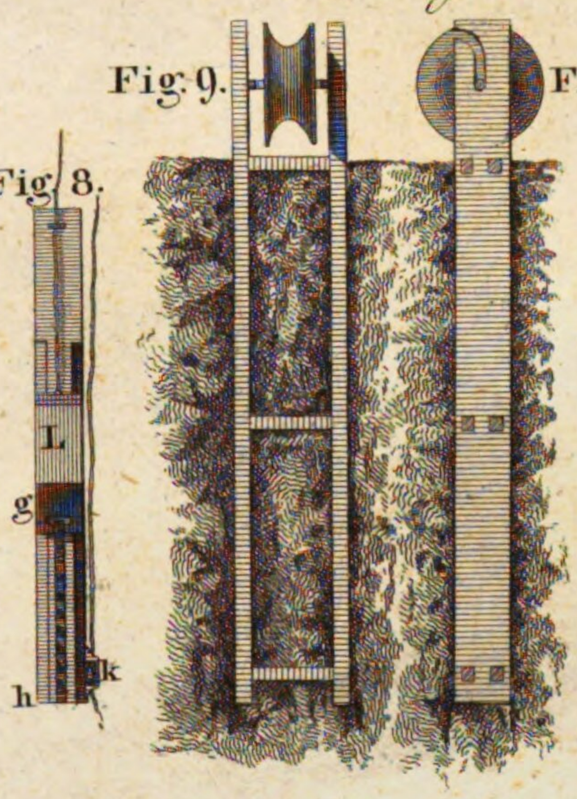


Seilleitung.

Fig. 9.

Fig. 10.

Fig. 8.



Seilleitungsrollen.

Fig. 11.

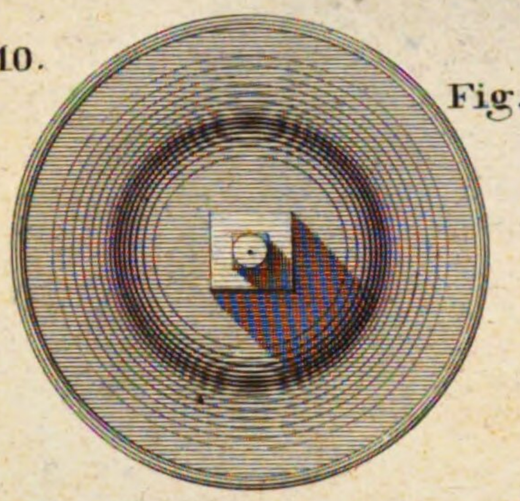
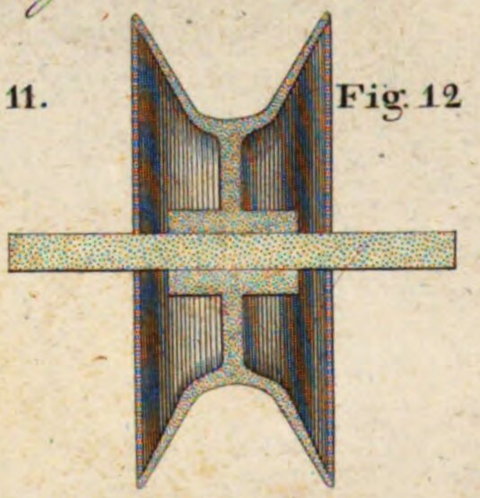
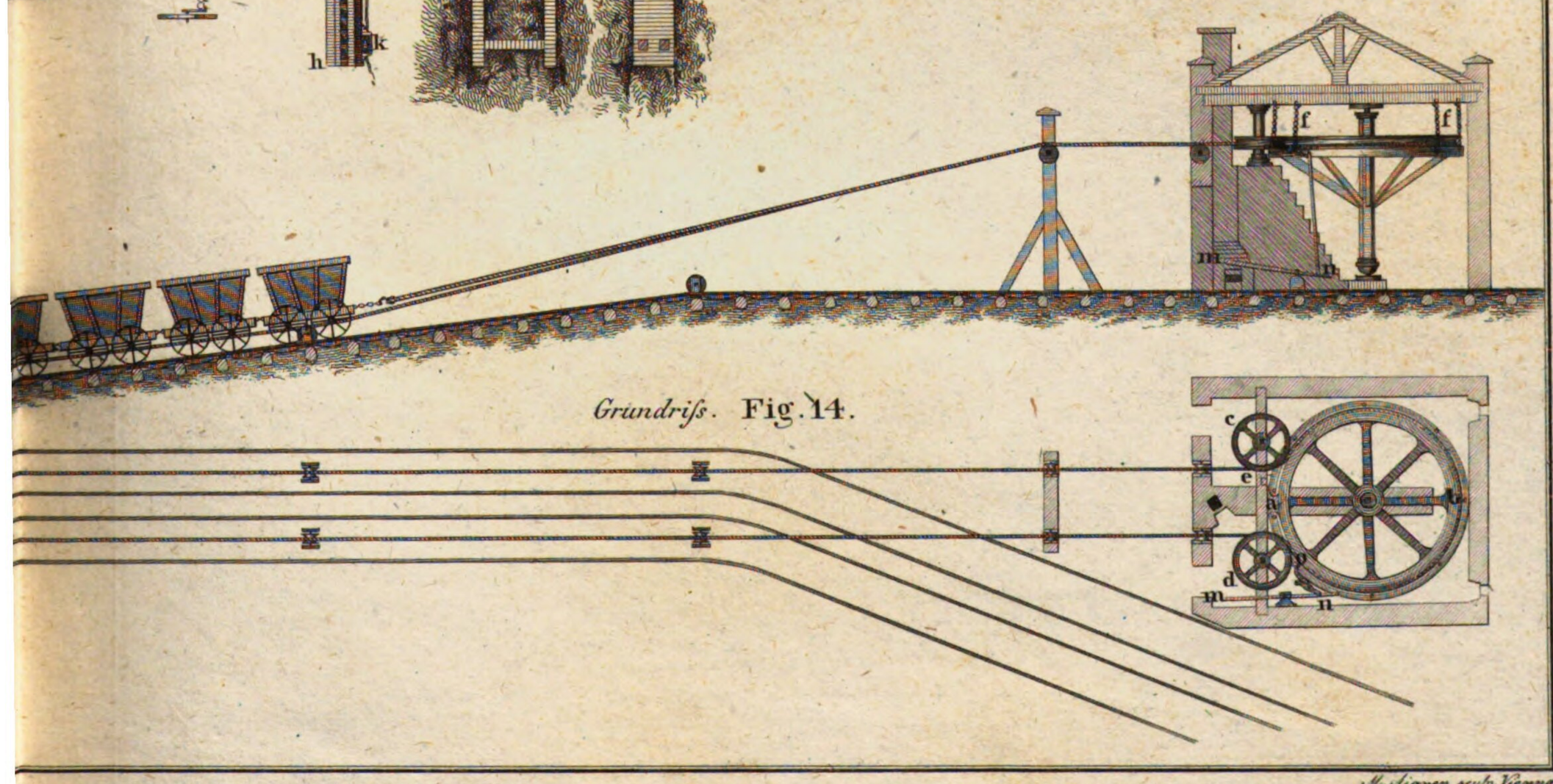


Fig. 12





Grundriſs. Fig. 14.

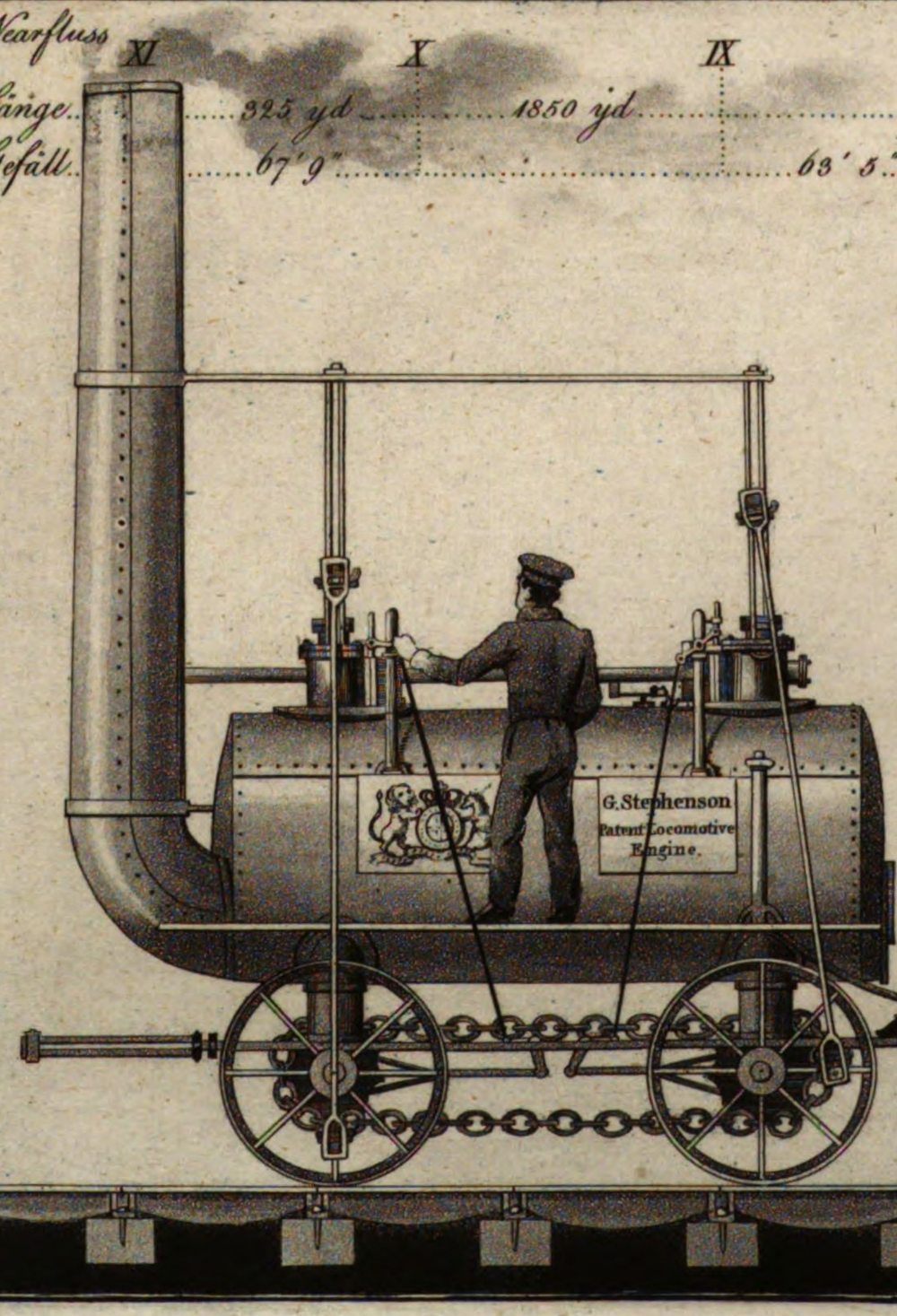
M. Aigner sculp. Vienna

EISENBAHN VON HE

Wearfluss XI X IX VIII VII

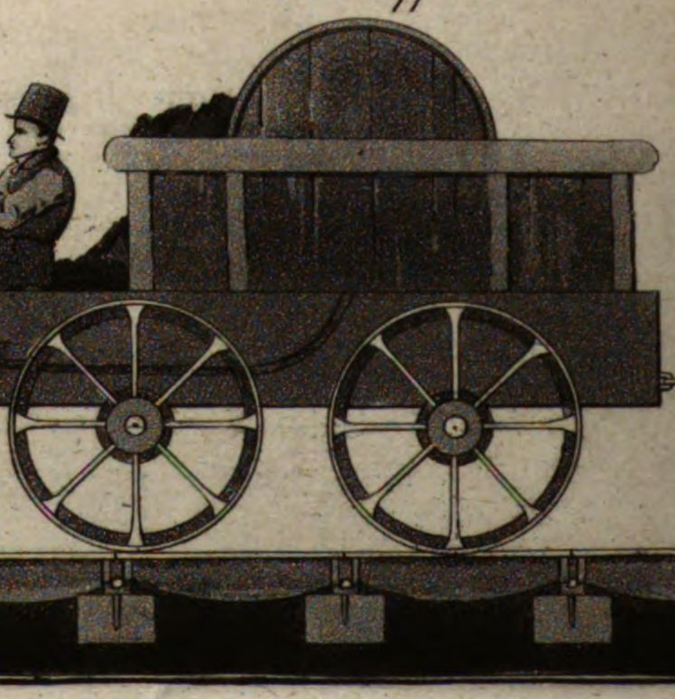
Länge ..... 325 yd ..... 1850 yd ..... 2500 yd ..... 902 yd ..... 716 yd

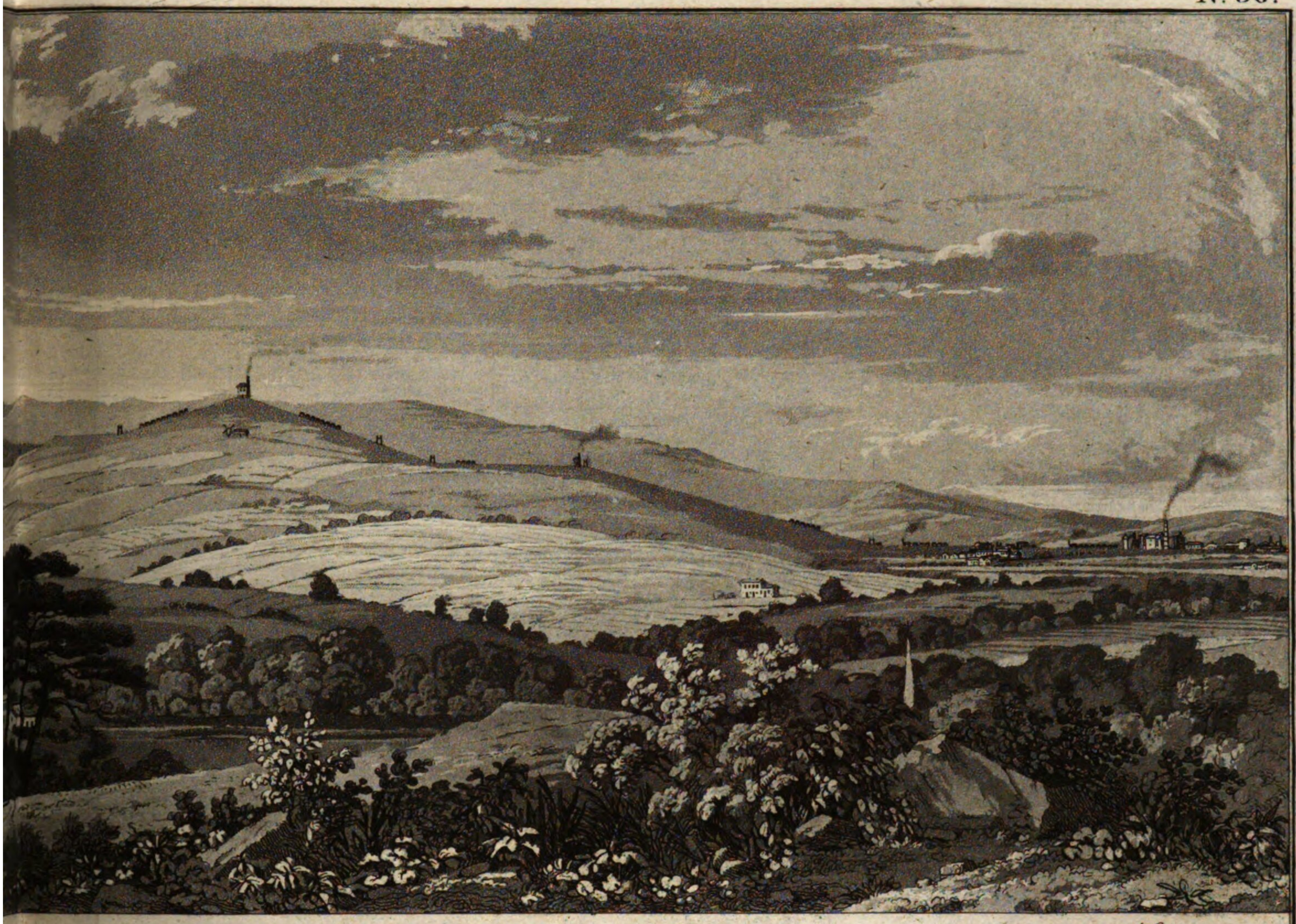
Gefäll ..... 67' 9" ..... 63' 5" ..... 76' 5" ..... 54' 7"



Dampfwag

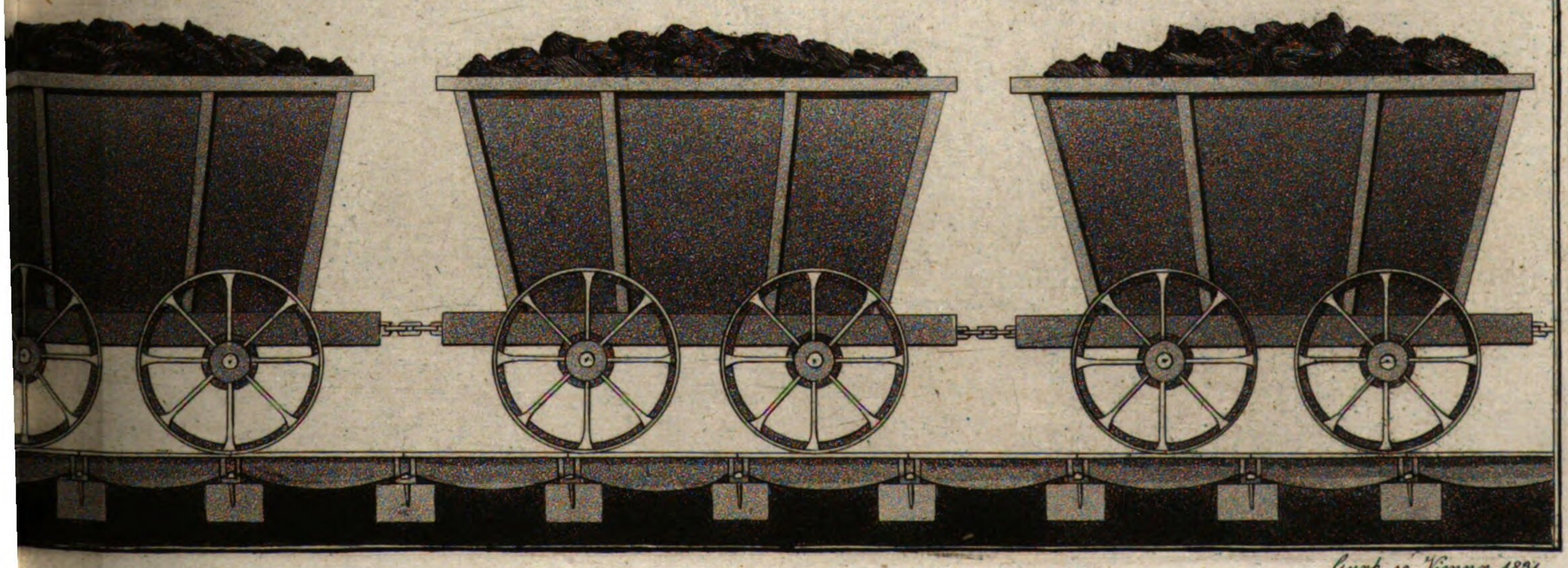
Kohlenwagen zur Speisung der Dampfmaschine.





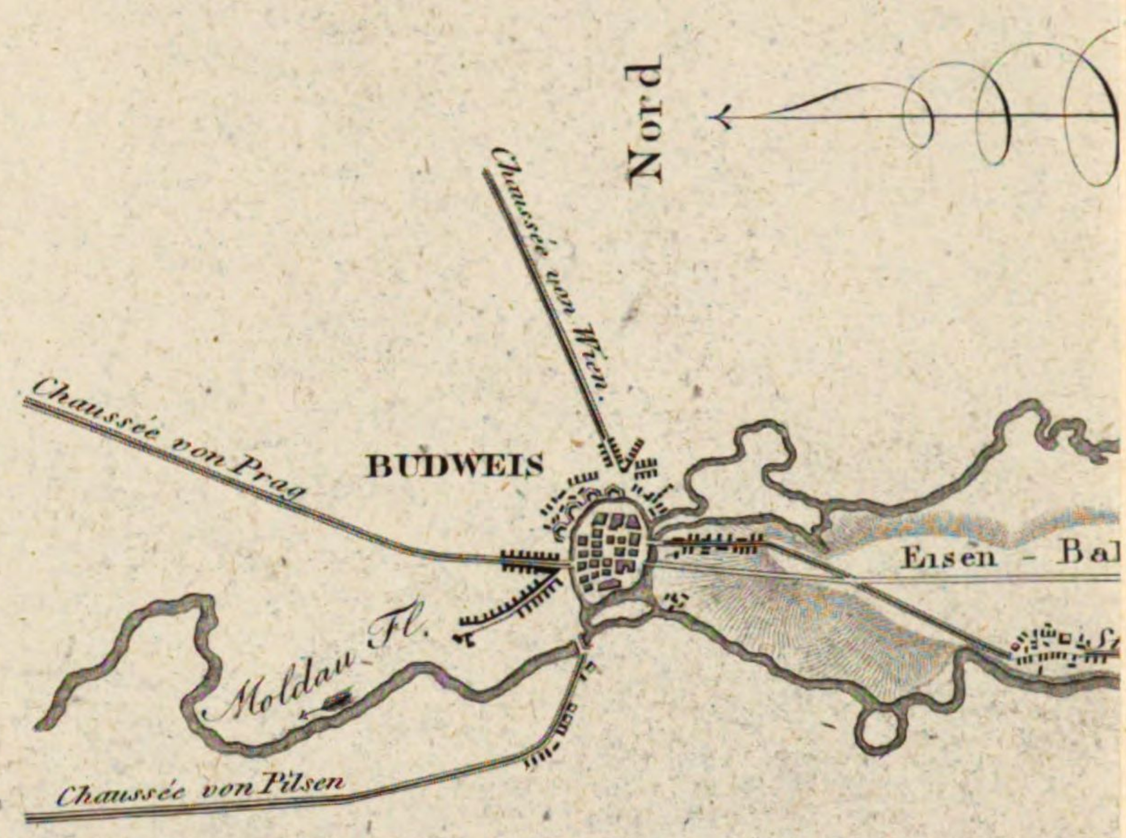
II	V	IV	III	II	I	Ketton Kohlenwerk.
1224 yd	1302 yd	775 yd	768 yd	832 yd	2541 yd	
129′ 6″	130′ 4″	115′	25′ 6″	154′ 6″	22′ 9″	

mit 16 daran hängenden Kohlenwägen.

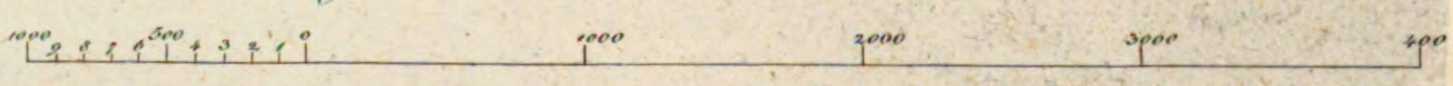


Gurk sc. Viennæ 1881.

N.º 37.

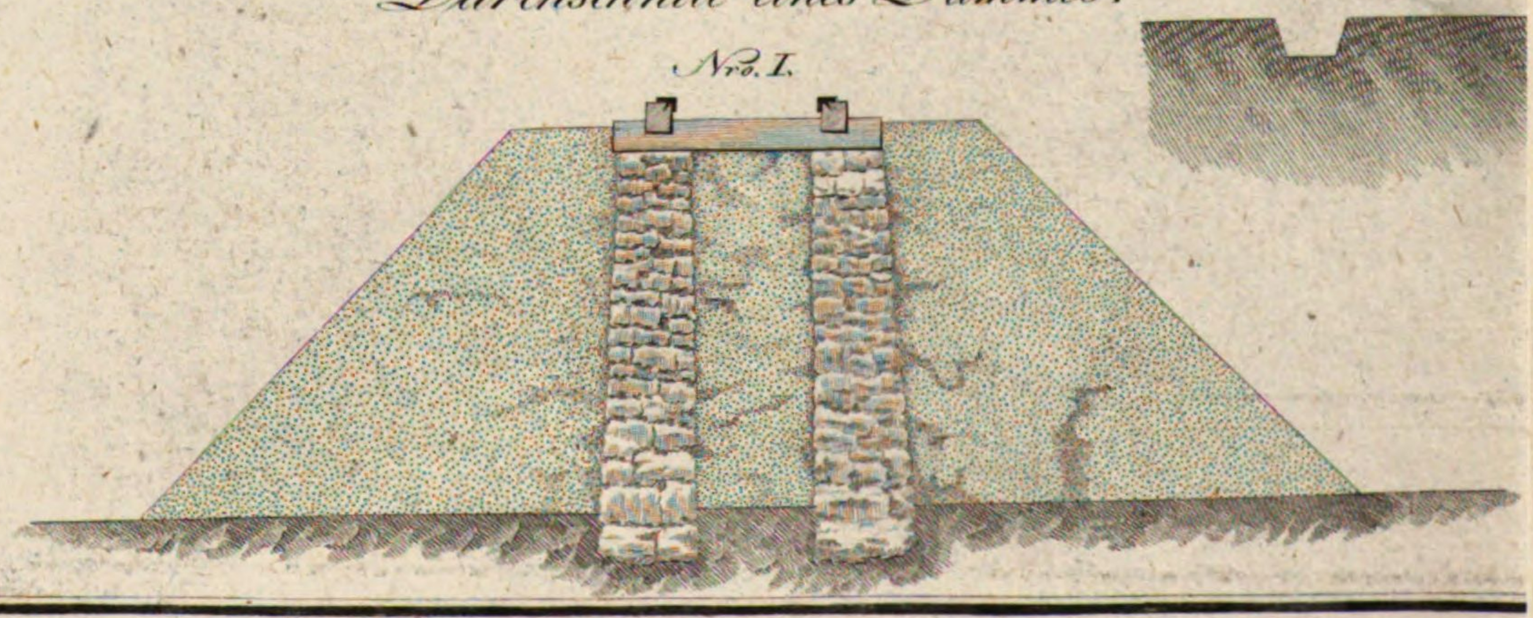


Massstab für den Grundriss der Eisenbahn 1 Wiener-Zoll = 1000 T



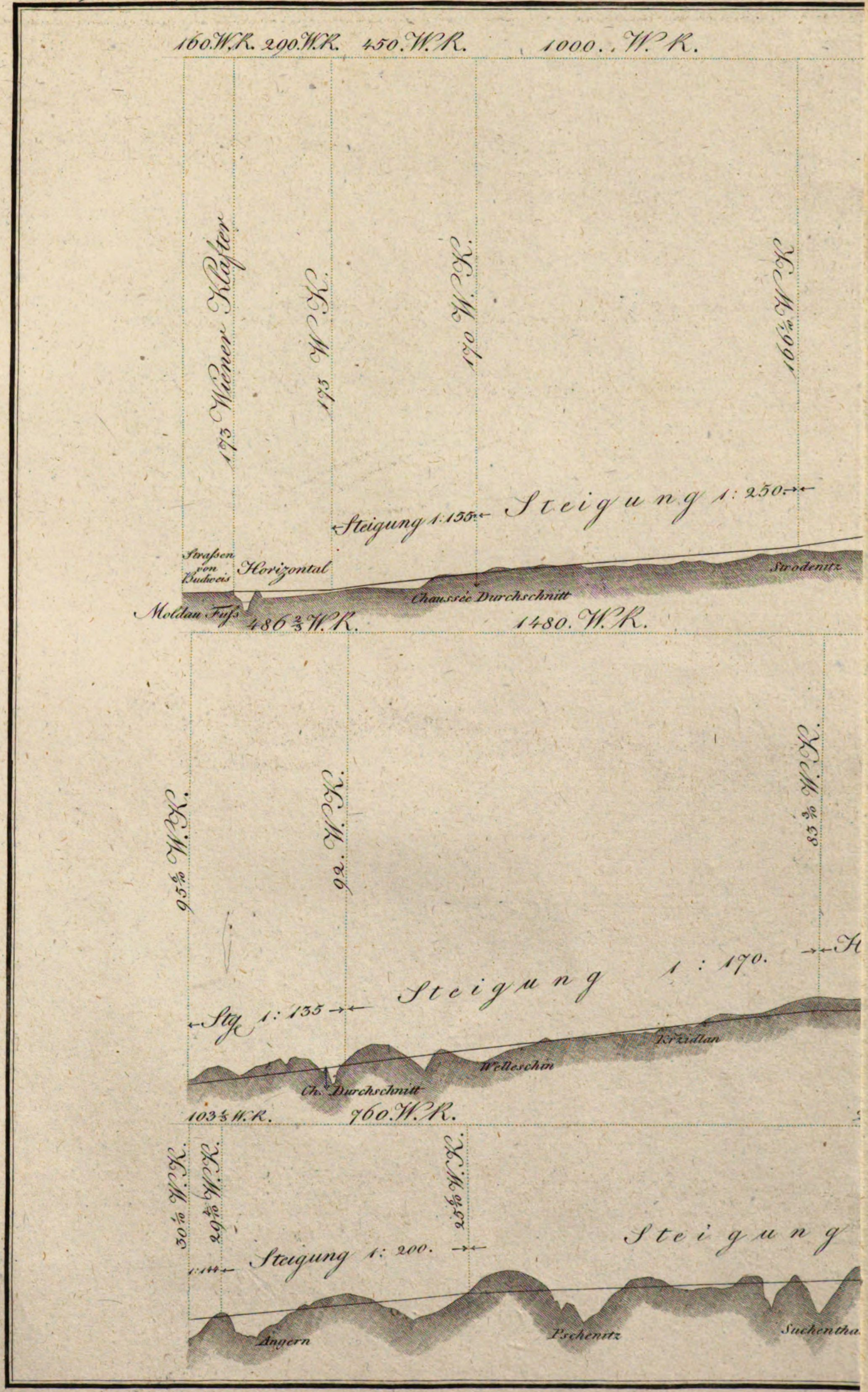
Durchschnitt eines Dammes.

Nro. I.



LÄNGEN PROFII

N°. 39.



4° Phys

Gesture

BSB Bayerische StaatsBibliothek
MDZ Münchener DigitalisierungsZentrum Digitale Bibliothek

Gerstner, Franz Joseph <<von>>,

Handbuch der Mechanik

Bd.: [4]

Prag ; Wien 1834

Augsburg, Staats- und Stadtbibliothek -- 4 Phys 64 -Tafeln
urn:nbn:de:bvb:12-bsb11221218-7